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FILE 'BIOSIS' ENTERED AT 16:50:33 ON 29 AUG 2002
COPYRIGHT (C) 2002 BIOLOGICAL ABSTRACTS INC.(R)

=> s Lethe L?/au or Boon-Falleur T?/au
L1          183 LETHE L?/AU OR BOON-FALLEUR T?/AU

=> s Lethe B?/au or Boon-Falleur T?/au
L2          310 LETHE B?/AU OR BOON-FALLEUR T?/AU

=> s l2 and ((LAGE (1N) 2) or ( Lage2) or (ny (1N) eso (1N) 1) or (nyeso1))
L3            7 L2 AND ((LAGE (1N) 2) OR (LAGE2) OR (NY (1N) ESO (1N) 1) OR
                (NYESO1))

=> dup rem l3
PROCESSING COMPLETED FOR L3
L4            5 DUP REM L3 (2 DUPLICATES REMOVED)

=> dis l4 1-5 ibib abs kwic

L4   ANSWER 1 OF 5  CAPLUS  COPYRIGHT 2002 ACS
ACCESSION NUMBER:         2001:636209  CAPLUS
DOCUMENT NUMBER:          135:191344
TITLE:                    Isolated genomic sequences which encode human
                          NY-ESO-1 cancer testis
                          tumor antigen and uses in diagnosing disorders
INVENTOR(S):              Lethe, Bernard; Boon-Falleur,
                          Thierry
PATENT ASSIGNEE(S):       Ludwig Institute for Cancer Research, USA
SOURCE:                   PCT Int. Appl., 49 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
     WO 2001062917      A1   20010830       WO 2001-US2126   20010122
         W: JP
         RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
             PT, SE, TR
PRIORITY APPLN. INFO.:                    US 2000-510635   A  20000222
AB   The invention provides the genomic sequence of the human NY-
     ESO-1 gene, including a 5' untranslated sequence, a 3'
     untranslated sequence, and intron sequences.  Human gene NY-
     ESO-1 contains three exons and two introns, spanning
     more than 2 kb of genomic DNA.  The invention also provides cDNA encoding
     human tumor-assocd. antigen EY-ESO-1 obtained from squamous cell cancer of
     esophagus.  NY-ESO-1 was found to be highly
     expressed in normal testis and ovary cells and several types of cancers,
     including melanoma, breast cancer, thyroid cancer, bladder cancer, ovarian
     cancer, lung cancer and hepatoma.  Nucleic acid mols. contg. a sequence of
     the NY-ESO-1 genomic DNA mol. may be used
     for diagnosing disorders and in vitro expression the NY-
     ESO-1 protein.
REFERENCE COUNT:          8     THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS
                                RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI   Isolated genomic sequences which encode human NY-ESO-
     1 cancer testis tumor antigen and uses in diagnosing disorders
IN   Lethe, Bernard; Boon-Falleur, Thierry
AB   The invention provides the genomic sequence of the human NY-
     ESO-1 gene, including a 5' untranslated sequence, a 3'
     untranslated sequence, and intron sequences.  Human gene NY-
     ESO-1 contains three exons and two introns, spanning
     more than 2 kb of genomic DNA.  The invention also provides cDNA encoding
     human tumor-assocd. antigen EY-ESO-1 obtained from squamous cell cancer of
     esophagus.  NY-ESO-1 was found to be highly
     expressed in normal testis and ovary cells and several types of cancers,
     including melanoma, breast cancer, thyroid cancer, bladder cancer, ovarian
     cancer, lung cancer and hepatoma.  Nucleic acid mols. contg. a sequence of
     the NY-ESO-1 genomic DNA mol. may be used
     for diagnosing disorders and in vitro expression the NY-
     ESO-1 protein.
ST   sequence human gene NYESO1; tumor antigen gene NYESO1
IT   Gene, animal
     RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP
     (Properties); THU (Therapeutic use); BIOL (Biological study); OCCU
     (Occurrence); USES (Uses)
        (NY-ESO-1; isolated genomic sequences
        which encode human NY-ESO-1 cancer testis
        tumor antigen and uses in diagnosing disorders)
IT   Nucleic acid amplification (method)
        (Q-beta replicase amplification; cDNA encoding human tumor-assocd.
        antigen NY-ESO-1, methods used in
        diagnosing disorders)
IT   Lung, neoplasm
     Melanoma
     Molecular cloning
     Ovary
     Ovary, neoplasm
     Testis
```

Thyroid gland, neoplasm
cDNA sequences
(cDNA encoding human tumor-assocd. antigen **NY-ESO-1**, its sequence, tissue distribution and uses in diagnosing disorders)
IT PCR (polymerase chain reaction)
Southern blot hybridization
(cDNA encoding human tumor-assocd. antigen **NY-ESO-1**, methods used in diagnosing disorders)
IT Diagnosis
(genetic; cDNA encoding human tumor-assocd. antigen **NY-ESO-1**, its sequence, tissue distribution and uses in diagnosing disorders)
IT Liver, neoplasm
(hepatoma; cDNA encoding human tumor-assocd. antigen **NY-ESO-1**, its sequence, tissue distribution and uses in diagnosing disorders)
IT Eukaryote (Eukaryotae)
(host cells for recombinant expression of human tumor-assocd. antigen **NY-ESO-1**)
IT Protein sequences
(human tumor-assocd. antigen **NY-ESO-1**, its sequence, tissue distribution, recombinant prodn. and uses in diagnosing disorders)
IT DNA sequences
(isolated genomic sequences which encode human **NY-ESO-1** cancer testis tumor antigen and uses in diagnosing disorders)
IT Nucleic acid amplification (method)
(ligase chain reaction; cDNA encoding human tumor-assocd. antigen **NY-ESO-1**, methods used in diagnosing disorders)
IT Bladder
Mammary gland
(neoplasm; cDNA encoding human tumor-assocd. antigen **NY-ESO-1**, its sequence, tissue distribution and uses in diagnosing disorders)
IT Promoter (genetic element)
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(promoter in expression vector for recombinant expression of human tumor-assocd. antigen **NY-ESO-1**)
IT Secondary structure
(protein; human tumor-assocd. antigen **NY-ESO-1**, its sequence, tissue distribution, recombinant prodn. and uses in diagnosing disorders)
IT Genetic methods
(self-sustained synthetic reaction; cDNA encoding human tumor-assocd. antigen **NY-ESO-1**, methods used in diagnosing disorders)
IT Esophagus
(squamous cell carcinoma; cDNA encoding human tumor-assocd. antigen **NY-ESO-1**, its sequence, tissue distribution and uses in diagnosing disorders)
IT Antigens
RL: BOC (Biological occurrence); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); USES (Uses)
(tumor-assocd., **NY-ESO-1**; human tumor-assocd. antigen **NY-ESO-1**, its sequence, tissue distribution, recombinant prodn. and uses in diagnosing disorders)
IT 188929-68-2P, Tumor-associated antigen **NY-ESO-1** (human)
RL: BOC (Biological occurrence); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); USES (Uses)
(amino acid sequence; human tumor-assocd. antigen **NY-ESO-1**, its sequence, tissue distribution, recombinant prodn. and uses in diagnosing disorders)
IT 187500-87-4
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(nucleotide sequence; cDNA encoding human tumor-assocd. antigen **NY-ESO-1**, its sequence, tissue distribution and uses in diagnosing disorders)
IT 253753-90-1
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(nucleotide sequence; isolated genomic sequences which encode human **NY-ESO-1** cancer testis tumor antigen and uses in diagnosing disorders)
IT 253753-91-2 259042-91-6 259042-92-7, 9: PN: WO0162917 SEQID: 9 unclaimed DNA 331289-94-2 331289-95-3 331289-96-4 356825-67-7 356825-68-8 356825-69-9 356825-70-2 357147-81-0, 8: PN: WO0162917 SEQID: 8 unclaimed DNA 357147-82-1
RL: PRP (Properties)
(unclaimed nucleotide sequence; isolated genomic sequences which encode human **NY-ESO-1** cancer testis tumor antigen and uses in diagnosing disorders)
IT 202815-16-5 202815-17-6 202815-18-7 248909-38-8
RL: PRP (Properties)
(unclaimed sequence; isolated genomic sequences which encode human **NY-ESO-1** cancer testis tumor antigen and uses in diagnosing disorders)

L4 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:240108 CAPLUS
DOCUMENT NUMBER: 134:247940
TITLE: PCR primers and method for multiple myeloma diagnosis by analyzing gene expression of tumor rejection antigen precursors
INVENTOR(S): Van Baren, Nicolas; Brasseur, Francis; **Boon-Falleur, Thierry**
PATENT ASSIGNEE(S): Ludwig Institute for Cancer Research, UK
SOURCE: U.S., 16 pp., Cont.-in-part of U.S. 5,985,571.
CODEN: USXXAM
DOCUMENT TYPE: Patent

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6210886	B1	20010403	US 1998-183931	19981030
US 5985571	A	19991116	US 1998-18422	19980204
US 6387630	B1	20020514	US 2000-705160	20001102

PRIORITY APPLN. INFO.: US 1998-18422 A2 19980204
US 1998-183931 A3 19981030

AB Methods for diagnosing multiple myeloma are disclosed. These methods are based upon the observation that tumor rejection antigen precursors are expressed in multiple myeloma. By assaying bone marrow samples, one can diagnose multiple myeloma, and also monitor the disease's progress. Therapeutic approaches to multiple myeloma are also disclosed.

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

IN Van Baren, Nicolas; Brasseur, Francis; **Boon-Falleur, Thierry**

IT Proteins, specific or class
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(tumor rejection antigen precursor **NY-ESO-1**
, gene for; PCR primers and method for multiple myeloma diagnosis by analyzing gene expression of tumor rejection antigen precursors)

L4 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:241272 CAPLUS
DOCUMENT NUMBER: 132:292703
TITLE: Tumor antigens and CTL clones isolated by a novel procedure
INVENTOR(S): Chaux, Pascal; Luiten, Rosalie; Demotte, Nathalie; Duffour, Marie-therese; Lurquin, Christophe; Traversari, Catia; Stroobant, Vincent; Cornelis, Guy R.; **Boon-falleur, Thierry**; Van Der Bruggen, Pierre; Schultz, Erwin; Warnier, Guy; et al.
PATENT ASSIGNEE(S): Belg.
SOURCE: PCT Int. Appl., 99 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000020445	A2	20000413	WO 1999-IB1664	19990915
WO 2000020445	A3	20000713		
W: AU, CA, CN, JP, KR, NZ, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 6407063	B1	20020618	US 1998-165863	19981002
AU 9959929	A1	20000426	AU 1999-59929	19990915
EP 1117679	A2	20010725	EP 1999-970091	19990915
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

PRIORITY APPLN. INFO.: US 1998-165863 A 19981002
US 1999-289350 A 19990409
WO 1999-IB1664 W 19990915

AB The present invention relates to isolation of cytotoxic T lymphocyte (CTL) clones. In particular, the present invention relates to isolated CTL clones that are specific for proteins of the MAGE family. The CTL clones of the present invention have been isolated by successive steps of stimulation and testing of lymphocytes with antigen presenting cells which present antigens derived from different expression systems, e.g., from recombinant Yersinia , recombinant Salmonella , or recombinant viruses. The present invention further relates to antigenic peptides as well as the peptide/HLA complexes which are recognized by the isolated CTL clones.

IN Chaux, Pascal; Luiten, Rosalie; Demotte, Nathalie; Duffour, Marie-therese; Lurquin, Christophe; Traversari, Catia; Stroobant, Vincent; Cornelis, Guy R.; **Boon-falleur, Thierry**; Van Der Bruggen, Pierre; Schultz, Erwin; Warnier, Guy; et al.

IT Antigens
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(tumor-assocd., **NY-ESO-1**; isolation of cytotoxic T lymphocyte clones recognizing tumor-assocd. antigen epitope-HLA antigen complexes)

L4 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:527429 CAPLUS
DOCUMENT NUMBER: 129:145638
TITLE: Cloning and gene structure of human LAGE-1 tumor rejection antigen precursor isoforms
INVENTOR(S): **Lethe, Bernard**; Lucas, Sophie; De Smet, Charles; Godelaine, Daniele; **Boon-Falleur, Thierry**
PATENT ASSIGNEE(S): Ludwig Institute for Cancer Research, USA
SOURCE: PCT Int. Appl., 74 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9832855	A1	19980730	WO 1998-US1445	19980127
W: AU, CA, CN, JP, KR, NZ, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5811519	A	19980922	US 1997-791495	19970127
ZA 9800656	A	19980817	ZA 1998-656	19980127
AU 9860421	A1	19980818	AU 1998-60421	19980127
EP 970206	A1	20000112	EP 1998-903726	19980127
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

PRIORITY APPLN. INFO.: US 1997-791495 19970127
WO 1998-US1445 19980127

AB The invention describes the LAGE-1 tumor assocd. gene, including fragments, allelic variants, and splice variants thereof. In addn. to the known NY-ESO-4 isoform previously identified, human cDNAs encoding 2 addnl. splicing isoforms were identified comprising 180 amino acid residues (LAGE-1a) and 210 amino acid residues (LAGE-1b). These

polypeptides are members of the tumor rejection antigen precursor family, but distinct from MAGE, BAGE, GAGE, RAGE, LB33/MUM-1, PRAME, NAGE, MAGE-Xp, or **NY-ESO-1** members. Of the normal tissues analyzed, only the testis, breast, term placenta, and one out of two uterus samples were pos. for LAGE-1; no expression was detected in colon, kidney, thyroid and brain cancers, nor in leukemias, whereas LAGE-1 expression was obsd. in melanomas, small cell lung cancer, sarcomas, head and neck, prostate and bladder tumors. A LAGE-1 structure with 3 exons was identified, and chromosome mapping localized the LAGE-1 one gene to a distal region of chromosome Xq28. Also included are polypeptides and fragments thereof encoded by such genes, and antibodies relating thereto. Methods and products also are provided for diagnosing and treating conditions characterized by expression of a LAGE-1 gene product.

IN **Lethe, Bernard**; Lucas, Sophie; De Smet, Charles; Godelaine, Daniele; **Boon-Falleur, Thierry**

AB The invention describes the LAGE-1 tumor assocd. gene, including fragments, allelic variants, and splice variants thereof. In addn. to the known NY-ESO-4 isoform previously identified, human cDNAs encoding 2 addnl. splicing isoforms were identified comprising 180 amino acid residues (LAGE-1a) and 210 amino acid residues (LAGE-1b). These polypeptides are members of the tumor rejection antigen precursor family, but distinct from MAGE, BAGE, GAGE, RAGE, LB33/MUM-1, PRAME, NAGE, MAGE-Xp, or **NY-ESO-1** members. Of the normal tissues analyzed, only the testis, breast, term placenta, and one out of two uterus samples were pos. for LAGE-1; no expression was detected in colon, kidney, thyroid and brain cancers, nor in leukemias, whereas LAGE-1 expression was obsd. in melanomas, small cell lung cancer, sarcomas, head and neck, prostate and bladder tumors. A LAGE-1 structure with 3 exons was identified, and chromosome mapping localized the LAGE-1 one gene to a distal region of chromosome Xq28. Also included are polypeptides and fragments thereof encoded by such genes, and antibodies relating thereto. Methods and products also are provided for diagnosing and treating conditions characterized by expression of a LAGE-1 gene product.

L4 ANSWER 5 OF 5 MEDLINE DUPLICATE 1
ACCESSION NUMBER: 1998289662 MEDLINE
DOCUMENT NUMBER: 98289662 * PubMed ID: 9626360
TITLE: LAGE-1, a new gene with tumor specificity.
AUTHOR: **Lethe B**; Lucas S; Michaux L; De Smet C; Godelaine D; Serrano A; De Plaen E; Boon T
CORPORATE SOURCE: Ludwig Institute for Cancer Research, Brussels Branch, Universite Catholique de Louvain.. lethe@licr.ucl.ac.be
SOURCE: INTERNATIONAL JOURNAL OF CANCER, (1998 Jun 10) 76 (6) 903-8.
Journal code: 0042124. ISSN: 0020-7136.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AJ003149; GENBANK-AJ223040; GENBANK-AJ223041; GENBANK-AJ223093
ENTRY MONTH: 199806
ENTRY DATE: Entered STN: 19980708
Last Updated on STN: 20000303
Entered Medline: 19980625

AB Representational difference analysis was used to identify genes that are expressed in a human melanoma cell line and not in normal skin. A cDNA clone that appeared to be specific for tumors was obtained and the corresponding gene was sequenced. This new gene was named LAGE-I. Using a LAGE-I probe to screen a cDNA library from the same melanoma cell line, we identified a closely related gene, which proved to be identical to NY-ESO-I, a gene recently reported to code for an antigen recognized by autologous antibodies in an esophageal squamous cell carcinoma. Gene LAGE-I maps to Xq28. It comprises 3 exons. Alternative splicing produces 2 major transcripts encoding polypeptides of 210 and 180 residues, respectively. Expression of LAGE-I was observed in 25-50% of tumor samples of melanomas, non-small-cell lung carcinomas, bladder, prostate and head and neck cancers. The only normal tissue that expressed the gene was testis. As for MAGE-AI, expression of LAGE-I is induced by deoxy-azacytidine in lymphoblastoid cells, suggesting that tumoral expression is due to demethylation. The expression of LAGE-I is strongly correlated with that of NY-ESO-I. It is also clearly correlated with the expression of MAGE genes.

AU **Lethe B**; Lucas S; Michaux L; De Smet C; Godelaine D; Serrano A; De Plaen E; Boon T

CN 0 (**NY-ESO-1** protein); 0 (Proteins)

```
=> s  ((LAGE (1N) 2) or ( Lage2) or (ny (1N) eso (1N) 1) or (nyeso1))
L5          335 ((LAGE (1N) 2) OR (LAGE2) OR (NY (1N) ESO (1N) 1) OR (NYESO1))

=> s l5 not l2
L6          328 L5 NOT L2

=> s l6 and PD<20000222
'20000222' NOT A VALID FIELD CODE
   3 FILES SEARCHED...
L7          129 L6 AND PD<20000222

=> s l7 and (gene or genomic)
L8           71 L7 AND (GENE OR GENOMIC)

=> s l7 (P) (gene or genomic)
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'L27 (P) '
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'L28 (P) '
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'L29 (P) '
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'L30 (P) '
L9           71 L7 (P) (GENE OR GENOMIC)

=> dup rem l9
PROCESSING COMPLETED FOR L9
L10          39 DUP REM L9 (32 DUPLICATES REMOVED)

=> dis l10 1-39 ibib abs kwic

L10  ANSWER 1 OF 39  CAPLUS  COPYRIGHT 2002 ACS
ACCESSION NUMBER:         2000:15488  CAPLUS
DOCUMENT NUMBER:          132:77134
```

TITLE: Methods for determining presence of cancer in a sample by determining expression of an SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis

INVENTOR(S): Tureci, Ozlem; Sahin, Ugur; Pfreundschuh, Michael; Rammensee, Georg; Stevanovic, Stefan; Chen, Yao-Tseng; Gure, Ali; Old, Lloyd J.
PATENT ASSIGNEE(S): Ludwig Institute for Cancer Research, USA

SOURCE: PCT Int. Appl., 40 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000000824	A1	20000106	WO 1999-US14493	19990625 <--
W: AU, CA, CN, JP, KR, NZ, ZA				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 6287756	B1	20010911	US 1998-105839	19980626
AU 9947221	A1	20000117	AU 1999-47221	19990625 <--
AU 745777	B2	20020328		
EP 1090294	A1	20010411	EP 1999-930755	19990625
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

PRIORITY APPLN. INFO.: US 1998-105839 A 19980626
US 1997-851130 A2 19970505
WO 1999-US14493 W 19990625

AB The invention relates to members of the SSX family of **genes**, as well as their uses. Also a part of the invention are peptides derived from SSX mols. and the **NY-ESO-1** mol., which form complexes with HLA mols., leading to lysis of cells presenting these complexes, by cytolytic T cells.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Methods for determining presence of cancer in a sample by determining expression of an SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis

PI WO 2000000824 A1 **20000106**

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000000824	A1	20000106	WO 1999-US14493	19990625 <--
W: AU, CA, CN, JP, KR, NZ, ZA				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 6287756	B1	20010911	US 1998-105839	19980626
AU 9947221	A1	20000117	AU 1999-47221	19990625 <--
AU 745777	B2	20020328		
EP 1090294	A1	20010411	EP 1999-930755	19990625
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

AB The invention relates to members of the SSX family of **genes**, as well as their uses. Also a part of the invention are peptides derived from SSX mols. and the **NY-ESO-1** mol., which form complexes with HLA mols., leading to lysis of cells presenting these complexes, by cytolytic T cells.

ST biomarker cancer SSX **gene** peptide NY ESO1 diagnosis therapy

IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(HLA-A, HLA-A3 and HLA-A24; methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(HLA-A1; methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(HLA-A2; methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(HLA-B, HLA-B8 and HLA-B52; methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(HLA-B35; methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(HLA-B44; methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(HLA-B7; methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); THU

(Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(MHC (major histocompatibility complex), class I; methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(**NY-ESO-1**; methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(SSX1; methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(SSX2; methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(SSX4; methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(SSX5; methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT **Gene**, animal
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(SSX; methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT Diagnosis
(cancer; methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT Intestine, neoplasm
(colorectal; methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT Uterus, neoplasm
(endometrium; methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT Neuroglia
(glioma; methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT Antitumor agents
Biomarkers (biological responses)
Blood analysis
Cytolysis
Immunoassay
Kidney, neoplasm
Lung, neoplasm
Ovary, neoplasm
PCR (polymerase chain reaction)
Stomach, neoplasm
T cell (lymphocyte)
Testis
(methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT Bladder
Mammary gland
Neck, anatomical
(neoplasm; methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT Antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(tumor-assocd., **NY-ESO-1**; methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT 253352-72-6 253352-73-7 253352-74-8 253352-75-9
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(methods for detg. presence of cancer in a sample by detg. expression of SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1 gene**, and uses for diagnosis)

IT 215865-63-7 215865-64-8 215865-69-3 215865-72-8 253834-36-5, 6: PN: WO0000824 TABLE: 2 unclaimed DNA 253834-37-6, 12: PN: WO0000824 TABLE: 2 unclaimed DNA 335539-05-4, 3: PN: US6287756 SEQID: 3 unclaimed DNA 335539-06-5, 4: PN: US6287756 SEQID: 4 unclaimed DNA 335539-09-8, 9: PN: US6287756 SEQID: 9 unclaimed DNA 335539-12-3 335539-13-4 335539-15-6 335539-17-8 335539-18-9

RL: PRP (Properties)
(unclaimed nucleotide sequence; methods for detg. presence of cancer in a sample by detg. expression of an SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1** **gene**, and uses for diagnosis)

IT 186494-81-5 186494-82-6
RL: PRP (Properties)
(unclaimed protein sequence; methods for detg. presence of cancer in a sample by detg. expression of an SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1** **gene**, and uses for diagnosis)

IT 186494-80-4 202815-18-7 248909-41-3 248909-45-7 248909-49-1
253666-99-8 253667-02-6 253667-09-3 253667-11-7 253667-13-9
253667-15-1 253667-17-3 253667-19-5 253667-21-9 253667-23-1
253667-25-3 253667-27-5 253667-29-7 253667-31-1 253667-33-3
253667-36-6 253667-38-8 253667-43-5 253769-35-6 253769-36-7
253769-37-8 253769-40-3 253769-41-4 253769-43-6 253769-45-8
253769-52-7 253769-53-8 253769-54-9 253769-55-0 253770-52-4
253771-48-1 253772-08-6 253772-09-7 253772-33-7 253772-78-0
253772-81-5 253772-82-6 253772-83-7 253772-84-8 253772-96-2
253772-97-3 253772-98-4 253772-99-5 253773-00-1 253773-01-2
253773-02-3 253773-03-4 253773-06-7 253773-08-9 253773-09-0
253773-10-3 253773-48-7 253773-49-8 253773-50-1 253773-51-2
253773-53-4 253773-54-5 253773-56-7 253773-57-8 253773-58-9
253773-59-0 253773-72-7 253773-79-4 253773-80-7 253777-14-9
253777-15-0 253777-16-1 253777-17-2 253777-18-3 253777-19-4
253777-20-7 253777-21-8 253777-22-9 253777-23-0 253777-24-1
253777-25-2 253777-26-3 253777-27-4 253777-28-5 253777-29-6
253777-30-9 253777-31-0 253777-32-1 253777-33-2
RL: PRP (Properties)
(unclaimed sequence; methods for detg. presence of cancer in a sample by detg. expression of an SSX **gene**, peptides derived from said SSX **gene** and **NY-ESO-1** **gene**, and uses for diagnosis)

L10 ANSWER 2 OF 39 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 2000:491885 BIOSIS
DOCUMENT NUMBER: PREV200000492006
TITLE: Strategy for monitoring T cell responses to **NY-ESO-1** in patients with any HLA class I allele.
AUTHOR(S): Gnjatic, Sacha (1); Nagata, Yasuhiro; Jager, Elke; Stockert, Elisabeth; Shankara, Srinivas; Roberts, Bruce L.; Mazzara, Gail P.; Lee, Sang Yull; Dunbar, P. Rod; Dupont, Bo; Cerundolo, Vincenzo; Ritter, Gerd; Chen, Yao-Tseng; Knuth, Alexander; Old, Lloyd J.
CORPORATE SOURCE: (1) Ludwig Institute for Cancer Research, New York Branch, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, NY, 10021 USA
SOURCE: Proceedings of the National Academy of Sciences of the United States of America, (**September 26, 2000**) Vol. 97, No. 20, pp. 10917-10922. print.
ISSN: 0027-8424.
DOCUMENT TYPE: Article
LANGUAGE: English
SUMMARY LANGUAGE: English

AB **NY-ESO-1** elicits frequent antibody responses in cancer patients, accompanied by strong CD8+ T cell responses against HLA-A2-restricted epitopes. To broaden the range of cancer patients who can be assessed for immunity to **NY-ESO-1**, a general method was devised to detect T cell reactivity independent of prior characterization of epitopes. A recombinant adenoviral vector encoding the full cDNA sequence of **NY-ESO-1** was used to transduce CD8-depleted peripheral blood lymphocytes as antigen-presenting cells. These modified antigen-presenting cells were then used to restimulate memory effector cells against **NY-ESO-1** from the peripheral blood of cancer patients. Specific CD8+ T cells thus sensitized were assayed on autologous B cell targets infected with a recombinant vaccinia virus encoding **NY-ESO-1**. Strong polyclonal responses were observed against **NY-ESO-1** in antibody-positive patients, regardless of their HLA profile. Because the vectors do not cross-react immunologically, only responses to **NY-ESO-1** were detected. The approach described here allows monitoring of CD8+ T cell responses to **NY-ESO-1** in the context of various HLA alleles and has led to the definition of **NY-ESO-1** peptides presented by HLA-Cw3 and HLA-Cw6 molecules.

TI Strategy for monitoring T cell responses to **NY-ESO-1** in patients with any HLA class I allele.

SO Proceedings of the National Academy of Sciences of the United States of America, (**September 26, 2000**) Vol. 97, No. 20, pp. 10917-10922. print.
ISSN: 0027-8424.

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IT . . .
system; peripheral blood lymphocyte; blood and lymphatics, immune system
IT Diseases
melanoma; neoplastic disease
IT Chemicals & Biochemicals

HLA-Cw3; HLA-Cw6; NY-ESO-1; NY-ESO-1 cDNA; human HLA class I gene (Hominidae); human NY-ESO-1 gene (Hominidae)
IT Alternate Indexing
Melanoma (MeSH)
ORGN . . .
Animal Viruses, Viruses, Microorganisms; Hominidae: Primates, Mammalia, Vertebrata, Chordata, Animalia; Poxviridae: Animal Viruses, Viruses, Microorganisms
ORGN Organism Name
adenovirus (Adenoviridae): gene vector; human (Hominidae): patient; vaccinia virus (Poxviridae): gene vector
ORGN Organism Superterms
Animal Viruses; Animals; Chordates; Humans; Mammals; Microorganisms; Primates; Vertebrates; Viruses

L10 ANSWER 3 OF 39 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:898335 CAPLUS
DOCUMENT NUMBER: 134:161778
TITLE: Efficient simultaneous presentation of NY-ESO-1/LAGE-1 primary and nonprimary open reading frame-derived CTL epitopes in melanoma
AUTHOR(S): Rimoldi, Donata; Rubio-Godoy, Verena; Dutoit, Valerie; Lienard, Danielle; Salvi, Suzanne; Guillaume, Philippe; Speiser, Daniel; Stockert, Elisabeth; Spagnoli, Giulio; Servis, Catherine; Cerottini, Jean-Charles; Lejeune, Ferdy; Romero, Pedro; Valmori, Danila
CORPORATE SOURCE: Ludwig Institute for Cancer Research, Lausanne Branch, University of Lausanne, Epalinges, Switz.
SOURCE: Journal of Immunology (2000), 165(12), 7253-7261
CODEN: JOIMA3; ISSN: 0022-1767
PUBLISHER: American Association of Immunologists
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Recent studies have shown that CTL epitopes derived from tumor-assocd. Ags can be encoded by both primary and nonprimary open reading frames (ORF). In this study we have analyzed the HLA-A2-restricted CD8+ T cell response to a recently identified CTL epitope derived from an alternative ORF product of gene LAGE-1 (named CAMEL), and the highly homologous gene NY-ESO-1 in melanoma patients. Using MHC/peptide tetramers we detected CAMEL1-11-specific CD8+ T cells in peptide-stimulated PBMC as well as among tumor-infiltrated lymph node cells from several patients. Sorting and expansion of tetramer+ CD8+ T cells allowed the isolation of tetramerbright and tetramerdull populations that specifically recognized the peptide Ag with high and low avidity, resp. Remarkably, only high avidity CAMEL-specific CTL were able to recognize Ag-expressing tumor cells. A large series of HLA-A2-pos. melanoma cell lines was characterized for the expression of LAGE-1 and NY-ESO-1 mRNA and protein and tested for recognition by CAMEL-specific CTL as well as CTL that recognize a peptide (NY-ESO-1157-165) encoded by the primary ORF products of the LAGE-1 and NY-ESO-1 genes. This anal. revealed that tumor-assocd. CD8+ T cell epitopes are simultaneously and efficiently generated from both primary and nonprimary ORF products of LAGE-1 and NY-ESO-1 genes and, importantly, that this occurs in the majority of melanoma tumors. These findings underscore the in vivo immunol. relevance of CTL epitopes derived from nonprimary ORF products and support their use as candidate vaccines for inducing tumor specific cell-mediated immunity against cancer.
REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI Efficient simultaneous presentation of NY-ESO-1/LAGE-1 primary and nonprimary open reading frame-derived CTL epitopes in melanoma
SO Journal of Immunology (2000), 165(12), 7253-7261
CODEN: JOIMA3; ISSN: 0022-1767
AB Recent studies have shown that CTL epitopes derived from tumor-assocd. Ags can be encoded by both primary and nonprimary open reading frames (ORF). In this study we have analyzed the HLA-A2-restricted CD8+ T cell response to a recently identified CTL epitope derived from an alternative ORF product of gene LAGE-1 (named CAMEL), and the highly homologous gene NY-ESO-1 in melanoma patients. Using MHC/peptide tetramers we detected CAMEL1-11-specific CD8+ T cells in peptide-stimulated PBMC as well as among tumor-infiltrated lymph node cells from several patients. Sorting and expansion of tetramer+ CD8+ T cells allowed the isolation of tetramerbright and tetramerdull populations that specifically recognized the peptide Ag with high and low avidity, resp. Remarkably, only high avidity CAMEL-specific CTL were able to recognize Ag-expressing tumor cells. A large series of HLA-A2-pos. melanoma cell lines was characterized for the expression of LAGE-1 and NY-ESO-1 mRNA and protein and tested for recognition by CAMEL-specific CTL as well as CTL that recognize a peptide (NY-ESO-1157-165) encoded by the primary ORF products of the LAGE-1 and NY-ESO-1 genes. This anal. revealed that tumor-assocd. CD8+ T cell epitopes are simultaneously and efficiently generated from both primary and nonprimary ORF products of LAGE-1 and NY-ESO-1 genes and, importantly, that this occurs in the majority of melanoma tumors. These findings underscore the in vivo immunol. relevance of CTL epitopes derived from nonprimary ORF products and support their use as candidate vaccines for inducing tumor specific cell-mediated immunity against cancer.
IT Gene, animal
RL: ADV (Adverse effect, including toxicity); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(LAGE-1 or NY-ESO-1; efficient simultaneous presentation of NY-ESO-1 /LAGE-1 primary and nonprimary open reading frame-derived CTL epitopes in melanoma)
IT Proteins, specific or class
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(LAGE-1; efficient simultaneous presentation of NY-ESO-1/LAGE-1 primary and nonprimary open reading frame-derived CTL epitopes in melanoma and expression of)
IT Proteins, specific or class
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL

(Biological study); FORM (Formation, nonpreparative)
(NY-ESO-1; efficient simultaneous presentation of NY-ESO-1/LAGE-1 primary and nonprimary open reading frame-derived CTL epitopes in melanoma and expression of)
IT T cell (lymphocyte)
(cytotoxic; efficient simultaneous presentation of NY-ESO-1/LAGE-1 primary and nonprimary open reading frame-derived CTL epitopes in melanoma)
IT Antigen-presenting cell
CD8-positive T cell
MHC restriction
(efficient simultaneous presentation of NY-ESO-1/LAGE-1 primary and nonprimary open reading frame-derived CTL epitopes in melanoma)
IT Antitumor agents
(melanoma; efficient simultaneous presentation of NY-ESO-1/LAGE-1 primary and nonprimary open reading frame-derived CTL epitopes in melanoma)
IT Vaccines
(tumor; efficient simultaneous presentation of NY-ESO-1/LAGE-1 primary and nonprimary open reading frame-derived CTL epitopes in melanoma)
IT Antitumor agents
(vaccines; efficient simultaneous presentation of NY-ESO-1/LAGE-1 primary and nonprimary open reading frame-derived CTL epitopes in melanoma)
IT 251110-45-9
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(efficient simultaneous presentation of NY-ESO-1/LAGE-1 primary and nonprimary open reading frame-derived CTL epitopes in melanoma)

L10 ANSWER 4 OF 39 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 1
ACCESSION NUMBER: 2000:651235 CAPLUS
DOCUMENT NUMBER: 133:320799
TITLE: NY-ESO-1 encodes DRB1*0401-restricted epitopes recognized by melanoma-reactive CD4+ T cells
AUTHOR(S): Zarour, Hassane M.; Storkus, Walter J.; Brusic, Vladimir; Williams, Eileen; Kirkwood, John M.
CORPORATE SOURCE: Department of Medicine and Melanoma Center, University of Pittsburgh Cancer Institute, Pittsburgh, PA, 15213, USA
SOURCE: Cancer Research (2000), 60(17), 4946-4952
CODEN: CNREA8; ISSN: 0008-5472
PUBLISHER: American Association for Cancer Research
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The NY-ESO-1 gene is expressed by a range of human tumors and encodes HLA-A2-restricted melanoma peptides recognized by CD8+ CTLs. Here we report that the NY-ESO-1 gene also encodes two overlapping, but non-cross-reactive, HLA-DRB1*0401-presented peptides that are recognized by CD4+ T cells. The NY-ESO-1119-143 peptide was able to induce specific CD4+ T cells in vitro from both an HLA-DRB1*0401+ normal donor and an HLA-DRB1*0401+ patient with melanoma. Bulk and cloned CD4+ T cells produced IFN-.gamma. specifically in response to, and also lysed, T2.DR4 cells pulsed with peptide NY-ESO-1119-143 and the autologous tumor cell line, but not a DRB1*0401+ melanoma cell line that does not express NY-ESO-1. Interestingly, the NY-ESO119-143 peptide contains two overlapping putative "core" epitopes recognized by non-cross-reactive anti-NY-ESO-1119-143 CD4+ T-cell clones. These data support the use of this novel DR4-restricted tumor peptide, NY-ESO-1119-143, or its two "sub-epitopes" in immunotherapeutic trials designed to generate or enhance specific CD4+ T-cell responses against tumors expressing NY-ESO-1 in vivo.
REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI NY-ESO-1 encodes DRB1*0401-restricted epitopes recognized by melanoma-reactive CD4+ T cells
SO Cancer Research (2000), 60(17), 4946-4952
CODEN: CNREA8; ISSN: 0008-5472
AB The NY-ESO-1 gene is expressed by a range of human tumors and encodes HLA-A2-restricted melanoma peptides recognized by CD8+ CTLs. Here we report that the NY-ESO-1 gene also encodes two overlapping, but non-cross-reactive, HLA-DRB1*0401-presented peptides that are recognized by CD4+ T cells. The NY-ESO-1119-143 peptide was able to induce specific CD4+ T cells in vitro from both an HLA-DRB1*0401+ normal donor and an HLA-DRB1*0401+ patient with melanoma. Bulk and cloned CD4+ T cells produced IFN-.gamma. specifically in response to, and also lysed, T2.DR4 cells pulsed with peptide NY-ESO-1119-143 and the autologous tumor cell line, but not a DRB1*0401+ melanoma cell line that does not express NY-ESO-1. Interestingly, the NY-ESO119-143 peptide contains two overlapping putative "core" epitopes recognized by non-cross-reactive anti-NY-ESO-1119-143 CD4+ T-cell clones. These data support the use of this novel DR4-restricted tumor peptide, NY-ESO-1119-143, or its two "sub-epitopes" in immunotherapeutic trials designed to generate or enhance specific CD4+ T-cell responses against tumors expressing NY-ESO-1 in vivo.
ST NY ESO1 gene melanoma peptide epitope cancer vaccine
IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(HLA-DR, allele restriction; NY-ESO-1 encodes DRB1*0401-restricted epitopes recognized by melanoma-reactive CD4+ T cells as candidate cancer vaccine)
IT Antigen presentation
CD4-positive T cell
Epitopes
Immunotherapy
MHC restriction
Vaccines
(NY-ESO-1 encodes DRB1*0401-restricted epitopes recognized by melanoma-reactive CD4+ T cells as candidate cancer vaccine)
IT Peptides, biological studies
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)

(NY-ESO-1 encodes DRB1*0401-restricted
epitopes recognized by melanoma-reactive CD4+ T cells as candidate
cancer vaccine)
IT Antitumor agents
(melanoma; NY-ESO-1 encodes
DRB1*0401-restricted epitopes recognized by melanoma-reactive CD4+ T
cells as candidate cancer vaccine)
IT Antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL
(Biological study); PROC (Process)
(tumor-assocd., NY-ESO-1; NY-
ESO-1 encodes DRB1*0401-restricted epitopes
recognized by melanoma-reactive CD4+ T cells as candidate cancer
vaccine)
IT Interferons
RL: BPR (Biological process); BSU (Biological study, unclassified); MFM
(Metabolic formation); BIOL (Biological study); FORM (Formation,
nonpreparative); PROC (Process)
(.gamma.; NY-ESO-1 encodes
DRB1*0401-restricted epitopes recognized by melanoma-reactive CD4+ T
cells as candidate cancer vaccine and induction of)
IT 302897-83-2P 302897-84-3P 302897-85-4P
RL: BAC (Biological activity or effector, except adverse); BPR (Biological
process); BSU (Biological study, unclassified); SPN (Synthetic
preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(NY-ESO-1 encodes DRB1*0401-restricted
epitopes recognized by melanoma-reactive CD4+ T cells as candidate
cancer vaccine)

L10 ANSWER 5 OF 39 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:296074 CAPLUS
DOCUMENT NUMBER: 133:57237
TITLE: Monitoring CD8 T cell responses to NY-
ESO-1: correlation of humoral and
cellular immune responses
AUTHOR(S): Jager, Elke; Nagata, Yasuhiro; Gnjatic, Sacha; Wada,
Hisashi; Stockert, Elisabeth; Karbach, Julia; Dunbar,
P. Rod; Lee, Sang Yull; Jungbluth, Achim; Jager, Dirk;
Arand, Michael; Ritter, Gerd; Cerundolo, Vincenzo;
Dupont, Bo; Chen, Yao-Tseng; Old, Lloyd J.; Knuth,
Alexander
CORPORATE SOURCE: II. Medizinische Klinik, Hamatologie-Onkologie,
Krankenhaus Nordwest, Frankfurt, 60488, Germany
SOURCE: Proceedings of the National Academy of Sciences of the
United States of America (2000), 97(9),
4760-4765
CODEN: PNASA6; ISSN: 0027-8424
PUBLISHER: National Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English
AB NY-ESO-1, a member of the cancer-testis
family of antigens, is expressed in a subset of a broad range of different
human tumor types. Patients with advanced NY-ESO-
1-expressing tumors frequently develop humoral immunity to
NY-ESO-1, and three HLA A2-restricted peptides
were defined previously as targets for cytotoxic CD8+ T cells in a
melanoma patient with NY-ESO-1 antibody.
The objectives of the present study were: (i) to develop enzyme-linked
immunospot (ELISPOT) and tetramer assays to measure CD8+ T cell responses
to NY-ESO-1, (ii) to det. the frequency of
CD8+ T cell responses to NY-ESO-1 in a
series of HLA-A2 patients with NY-ESO-1
expressing tumors, (iii) to det. the relation between CD8+ T cell and
humoral immune responses to NY-ESO-1, and
(iv) to compare results of NY-ESO-1 ELISPOT
assays performed independently in two labs. with T cells from the same
patients. NY-ESO-1 ELISPOT and tetramer
assays with excellent sensitivity, specificity, and reproducibility have
been developed and found to correlate with cytotoxicity assays. CD8+ T
cell responses to HLA-A2-restricted NY-ESO-1
peptides were detected in 10 of 11 patients with NY-ESO
-1 antibody, but not in patients lacking antibody or in patients
with NY-ESO-1-neg. tumors. The results of
ELISPOT assays were concordant in the two labs., providing the basis for
standardized monitoring of T cell responses in patients receiving
NY-ESO-1 vaccines.
REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI Monitoring CD8 T cell responses to NY-ESO-1:
correlation of humoral and cellular immune responses
SO Proceedings of the National Academy of Sciences of the United States of
America (2000), 97(9), 4760-4765
CODEN: PNASA6; ISSN: 0027-8424
AB NY-ESO-1, a member of the cancer-testis
family of antigens, is expressed in a subset of a broad range of different
human tumor types. Patients with advanced NY-ESO-
1-expressing tumors frequently develop humoral immunity to
NY-ESO-1, and three HLA A2-restricted peptides
were defined previously as targets for cytotoxic CD8+ T cells in a
melanoma patient with NY-ESO-1 antibody.
The objectives of the present study were: (i) to develop enzyme-linked
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to NY-ESO-1, (ii) to det. the frequency of
CD8+ T cell responses to NY-ESO-1 in a
series of HLA-A2 patients with NY-ESO-1
expressing tumors, (iii) to det. the relation between CD8+ T cell and
humoral immune responses to NY-ESO-1, and
(iv) to compare results of NY-ESO-1 ELISPOT
assays performed independently in two labs. with T cells from the same
patients. NY-ESO-1 ELISPOT and tetramer
assays with excellent sensitivity, specificity, and reproducibility have
been developed and found to correlate with cytotoxicity assays. CD8+ T
cell responses to HLA-A2-restricted NY-ESO-1
peptides were detected in 10 of 11 patients with NY-ESO
-1 antibody, but not in patients lacking antibody or in patients
with NY-ESO-1-neg. tumors. The results of
ELISPOT assays were concordant in the two labs., providing the basis for
standardized monitoring of T cell responses in patients receiving
NY-ESO-1 vaccines.
IT Peptides, biological studies
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); BPR
(Biological process); BSU (Biological study, unclassified); SPN (Synthetic

preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(HLA-A2 tetrameric complexes; monitoring CD8 T cell responses to NY-ESO-1 by ELISPOT and humoral and cellular immune responses to)
IT Histocompatibility antigens
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(HLA-A2, NY-ESO-1 tetrameric complexes; monitoring CD8 T cell responses to NY-ESO-1 by ELISPOT and humoral and cellular immune responses)
IT MHC restriction
(HLA-A2; monitoring CD8 T cell responses to NY-ESO-1 by ELISPOT and humoral and cellular immune responses)
IT Antigens
RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(NY-ESO-1 (cancer-testis antigen); monitoring CD8 T cell responses to NY-ESO-1 by ELISPOT and humoral and cellular immune responses)
IT Gene, animal
RL: ADV (Adverse effect, including toxicity); ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(NY-ESO-1; monitoring CD8 T cell responses to NY-ESO-1 by ELISPOT and humoral and cellular immune responses)
IT T cell (lymphocyte)
(cytotoxic; monitoring CD8 T cell responses to NY-ESO-1 by ELISPOT and humoral and cellular immune responses)
IT Immunoassay
(enzyme-linked immunospot assay; monitoring CD8 T cell responses to NY-ESO-1 by ELISPOT and humoral and cellular immune responses)
IT Antigen presentation
Blood analysis
CD8-positive T cell
Tumor markers
(monitoring CD8 T cell responses to NY-ESO-1 by ELISPOT and humoral and cellular immune responses)
IT Immunoglobulins
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)
(monitoring CD8 T cell responses to NY-ESO-1 by ELISPOT and humoral and cellular immune responses)
IT Melanoma
Ovary, neoplasm
(monitoring CD8 T cell responses to NY-ESO-1 by ELISPOT and humoral and cellular immune responses in humans with)
IT Mammary gland
Prostate gland
(neoplasm; monitoring CD8 T cell responses to NY-ESO-1 by ELISPOT and humoral and cellular immune responses in humans with)
IT Lung, neoplasm
(non-small-cell carcinoma; monitoring CD8 T cell responses to NY-ESO-1 by ELISPOT and humoral and cellular immune responses in humans with)
IT Vaccines
Vaccines
(tumor; monitoring CD8 T cell responses to NY-ESO-1 by ELISPOT and humoral and cellular immune responses in relation to)
IT Antitumor agents
Antitumor agents
(vaccines; monitoring CD8 T cell responses to NY-ESO-1 by ELISPOT and humoral and cellular immune responses in relation to)
IT 202815-16-5DP, HLA-A2 tetrameric complexes 202815-17-6DP, HLA-A2 tetrameric complexes
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(monitoring CD8 T cell responses to NY-ESO-1 by ELISPOT and humoral and cellular immune responses)

L10 ANSWER 6 OF 39 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 2
ACCESSION NUMBER: 2000:808775 CAPLUS
DOCUMENT NUMBER: 134:235283
TITLE: Expression of cancer testis genes in human brain tumors
AUTHOR(S): Sahin, Ugur; Koslowski, Michael; Tureci, Ozlem; Eberle, Thomas; Zwick, Carsten; Romeike, Bernd; Moringlane, Jean-Richard; Schwechheimer, Karl; Feiden, Wolfgang; Pfreundschuh, Michael
CORPORATE SOURCE: Department of Medicine, Saarland University Medical School, Homburg, D-66421, Germany
SOURCE: Clinical Cancer Research (2000), 6(10), 3916-3922
CODEN: CCREF4; ISSN: 1078-0432
PUBLISHER: American Association for Cancer Research
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Cancer-testis (CT) genes are expressed in a variety of human cancers but not in normal tissues, except for testis tissue, and represent promising targets for immunotherapeutic and gene therapeutic approaches. Because little is known about their composite expression in human brain tumors, the authors investigated the expression of seven CT genes (MAGE-3, NY-ESO-1, HOM-MEL-40/SSX-2, SSX-1, SSX-4, HOM-TES-14/SCP-1, and HOM-TES-85) in 88 human brain tumor specimens. Meningiomas expressed only HOM-TES-14/SCP-1 (18% of meningiomas were HOM-TES-14/SCP-1 pos.) and did not express any other CT genes. 1 Ependymoma was neg. for all CT genes tested. SSX-4 was the only CT gene expressed in oligodendrogliomas (2 of 5 cases), and it was also expressed in oligoastrocytomas (3 of 4 cases) and astrocytomas (10 of 37 cases).

Astrocytomas were most frequently pos. for HOM-TES-14/SCP-1 (40%) and SSX-4 (27%), followed by HOM-TES-85 (13%), SSX-2 (11%), and MAGE-3 (7%). Whereas MAGE-3 was detected only in grade IV astrocytomas, the expression of the other CT **genes** showed no clear correlation with histol. grade. Of 39 astrocytomas, 60% expressed at least one CT **gene**, 21% expressed two CT **genes**, and 8% coexpressed three CT **genes** of the seven CT **genes** investigated. The authors conclude that a majority of oligoastrocytomas and astrocytomas might be amenable to specific immunotherapeutic interventions. However, the identification of addnl. tumor-specific antigens with a frequent expression in gliomas is warranted to allow for the development of widely applicable polyvalent glioma vaccines.

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Expression of cancer testis **genes** in human brain tumors

SO Clinical Cancer Research (2000), 6(10), 3916-3922
CODEN: CCREF4; ISSN: 1078-0432

AB Cancer-testis (CT) **genes** are expressed in a variety of human cancers but not in normal tissues, except for testis tissue, and represent promising targets for immunotherapeutic and **gene** therapeutic approaches. Because little is known about their composite expression in human brain tumors, the authors investigated the expression of seven CT **genes** (MAGE-3, **NY-ESO-1**, HOM-MEL-40/SSX-2, SSX-1, SSX-4, HOM-TES-14/SCP-1, and HOM-TES-85) in 88 human brain tumor specimens. Meningiomas expressed only HOM-TES-14/SCP-1 (18% of meningiomas were HOM-TES-14/SCP-1 pos.) and did not express any other CT **genes**. 1 Ependymoma was neg. for all CT **genes** tested. SSX-4 was the only CT **gene** expressed in oligodendrogliomas (2 of 5 cases), and it was also expressed in oligoastrocytomas (3 of 4 cases) and astrocytomas (10 of 37 cases). Astrocytomas were most frequently pos. for HOM-TES-14/SCP-1 (40%) and SSX-4 (27%), followed by HOM-TES-85 (13%), SSX-2 (11%), and MAGE-3 (7%). Whereas MAGE-3 was detected only in grade IV astrocytomas, the expression of the other CT **genes** showed no clear correlation with histol. grade. Of 39 astrocytomas, 60% expressed at least one CT **gene**, 21% expressed two CT **genes**, and 8% coexpressed three CT **genes** of the seven CT **genes** investigated. The authors conclude that a majority of oligoastrocytomas and astrocytomas might be amenable to specific immunotherapeutic interventions. However, the identification of addnl. tumor-specific antigens with a frequent expression in gliomas is warranted to allow for the development of widely applicable polyvalent glioma vaccines.

ST brain tumor cancer testis **gene**

IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(HOM-MEL-40/SSX-2; cancer testis **genes** expression in brain tumors)

IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(HOM-TES-14/SCP-1; cancer testis **genes** expression in brain tumors)

IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(HOM-TES-85; cancer testis **genes** expression in brain tumors)

IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(MAGE-3; cancer testis **genes** expression in brain tumors)

IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**NY-ESO-1**; cancer testis **genes** expression in brain tumors)

IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(SSX-1; cancer testis **genes** expression in brain tumors)

IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(SSX-4; cancer testis **genes** expression in brain tumors)

IT Astrocyte
(astrocytoma; cancer testis **genes** expression in brain tumors)

IT Brain, neoplasm
(cancer testis **genes** expression in brain tumors)

IT Meninges
(meningioma; cancer testis **genes** expression in brain tumors)

IT Oligodendrocyte
(oligodendroglioma; cancer testis **genes** expression in brain tumors)

L10 ANSWER 7 OF 39 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 3

ACCESSION NUMBER: 2000:525760 CAPLUS

DOCUMENT NUMBER: 133:236005

TITLE: Identification on a human sarcoma of two new **genes** with tumor-specific expression

AUTHOR(S): Martelange, Valerie; De Smet, Charles; De Plaen, Etienne; Lurquin, Christophe; Boon, Thierry

CORPORATE SOURCE: Ludwig Institute for Cancer Research, Brussels Branch, Universite Catholique de Louvain, Brussels, B-1200, Belg.

SOURCE: Cancer Research (2000), 60(14), 3848-3855
CODEN: CNREA8; ISSN: 0008-5472

PUBLISHER: American Association for Cancer Research

DOCUMENT TYPE: Journal

LANGUAGE: English

AB **Genes** MAGE, BAGE, GAGE, and LAGE-1/**NY-ESO-1** code for antigens that are recognized on melanoma cells by autologous CTLs. Because the pattern of expression of these **genes** results in the presence of antigens on many tumors of various histol. types and not on normal tissues, these antigens qualify for cancer immunotherapy. To identify new **genes** with tumor-specific expression, the authors applied a cDNA subtraction approach, i.e., representational difference anal., to a human sarcoma cell line. The authors obtained two cDNA clones that appeared to be tumor specific. The corresponding **genes** were named SAGE and HAGE because they have the same pattern of expression as **genes** of the MAGE family. SAGE encodes a putative protein of 904 amino acids and shows no homol. to any recorded **gene**. Like the MAGE-A **genes**

, it is located in the q28 region of chromosome X. Expression of **gene** SAGE was obsd. mainly in bladder carcinoma, lung carcinoma, and head and neck carcinoma but not in normal tissues, with the exception of testis. **Gene** HAGE, which is located on chromosome 6, encodes a putative protein of 648 amino acids. This protein is a new member of the DEAD-box family of ATP-dependent RNA helicases. **Gene** HAGE is expressed in many tumors of various histol. types at a level that is 100-fold higher than the level obsd. in normal tissues except testis. Because of this tumor-specific expression, **genes** SAGE and HAGE ought to encode antigens that could be useful for antitumoral therapeutic vaccination.

REFERENCE COUNT: 57 THERE ARE 57 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Identification on a human sarcoma of two new **genes** with tumor-specific expression

SO Cancer Research (2000), 60(14), 3848-3855
CODEN: CNREA8; ISSN: 0008-5472

AB **Genes** MAGE, BAGE, GAGE, and LAGE-1/NY-**ESO-1** code for antigens that are recognized on melanoma cells by autologous CTLs. Because the pattern of expression of these **genes** results in the presence of antigens on many tumors of various histol. types and not on normal tissues, these antigens qualify for cancer immunotherapy. To identify new **genes** with tumor-specific expression, the authors applied a cDNA subtraction approach, i.e., representational difference anal., to a human sarcoma cell line. The authors obtained two cDNA clones that appeared to be tumor specific. The corresponding **genes** were named SAGE and HAGE because they have the same pattern of expression as **genes** of the MAGE family. SAGE encodes a putative protein of 904 amino acids and shows no homol. to any recorded **gene**. Like the MAGE-A **genes** , it is located in the q28 region of chromosome X. Expression of **gene** SAGE was obsd. mainly in bladder carcinoma, lung carcinoma, and head and neck carcinoma but not in normal tissues, with the exception of testis. **Gene** HAGE, which is located on chromosome 6, encodes a putative protein of 648 amino acids. This protein is a new member of the DEAD-box family of ATP-dependent RNA helicases. **Gene** HAGE is expressed in many tumors of various histol. types at a level that is 100-fold higher than the level obsd. in normal tissues except testis. Because of this tumor-specific expression, **genes** SAGE and HAGE ought to encode antigens that could be useful for antitumoral therapeutic vaccination.

ST sarcoma **gene** tumor specific expression cDNA sequence human

IT **Gene**, animal
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(HAGE; cDNA sequences of human sarcoma **genes** with tumor-specific expression)

IT Enzymes, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(RNA-unwinding, helicases, **gene** HAGE ATP-dependent; cDNA sequences of human sarcoma **genes** with tumor-specific expression)

IT **Gene**, animal
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(SAGE; cDNA sequences of human sarcoma **genes** with tumor-specific expression)

IT Lung, neoplasm
Prostate gland
(adenocarcinoma; cDNA sequences of human sarcoma **genes** with tumor-specific expression)

IT Animal cell line
Brain, neoplasm
Kidney, neoplasm
Leukemia
Melanoma
Multiple myeloma
Protein sequences
Sarcoma
Testis
Thyroid gland, neoplasm
Uterus, neoplasm
cDNA sequences
(cDNA sequences of human sarcoma **genes** with tumor-specific expression)

IT mRNA
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(cDNA sequences of human sarcoma **genes** with tumor-specific expression)

IT Bronchi
(carcinoma, bronchiolo-alveolar; cDNA sequences of human sarcoma **genes** with tumor-specific expression)

IT Bladder
Esophagus
Mammary gland
(carcinoma; cDNA sequences of human sarcoma **genes** with tumor-specific expression)

IT Intestine, neoplasm
(colorectal carcinoma; cDNA sequences of human sarcoma **genes** with tumor-specific expression)

IT Skin, neoplasm
(epidermoid carcinoma; cDNA sequences of human sarcoma **genes** with tumor-specific expression)

IT **Gene**
(expression; cDNA sequences of human sarcoma **genes** with tumor-specific expression)

IT Antigens
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(**gene** SAGE; cDNA sequences of human sarcoma **genes** with tumor-specific expression)

IT Genetic mapping
(genetic mapping of human sarcoma **genes** with tumor-specific expression)

IT Protein sequences
(homol.; cDNA sequences of human sarcoma **genes** with tumor-specific expression)

IT Chromosome
(human 6; genetic mapping of human sarcoma **genes** with tumor-specific expression)
IT Chromosome
(human X; genetic mapping of human sarcoma **genes** with tumor-specific expression)
IT Mesothelium
(mesothelioma; cDNA sequences of human sarcoma **genes** with tumor-specific expression)
IT Nerve, neoplasm
(neuroblastoma; cDNA sequences of human sarcoma **genes** with tumor-specific expression)
IT Lung, neoplasm
(non-small-cell carcinoma; cDNA sequences of human sarcoma **genes** with tumor-specific expression)
IT Myoma
(rhabdomyosarcoma; cDNA sequences of human sarcoma **genes** with tumor-specific expression)
IT Head
Neck, anatomical
(squamous cell carcinoma; cDNA sequences of human sarcoma **genes** with tumor-specific expression)
IT Eye, neoplasm
(uvea, melanoma; cDNA sequences of human sarcoma **genes** with tumor-specific expression)
IT 247210-52-2 293772-76-6
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(amino acid sequence; cDNA sequences of human sarcoma **genes** with tumor-specific expression)
IT 247210-51-1, GenBank AJ278110 269037-52-7, GenBank AJ278111
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(nucleotide sequence; cDNA sequences of human sarcoma **genes** with tumor-specific expression)

L10 ANSWER 8 OF 39 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:491168 CAPLUS
DOCUMENT NUMBER: 133:206490
TITLE: Identification of CD4+ T cell epitopes from **NY-ESO-1** presented by HLA-DR molecules
AUTHOR(S): Zeng, Gang; Touloukian, Christopher E.; Wang, Xiang; Restifo, Nicholas P.; Rosenberg, Steven A.; Wang, Rong-Fu
CORPORATE SOURCE: Surgery Branch, National Cancer Institute, National Institutes of Health, Bethesda, MD, 20892, USA
SOURCE: Journal of Immunology (2000), 165(2), 1153-1159
CODEN: JOIMA3; ISSN: 0022-1767
PUBLISHER: American Association of Immunologists
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In previous studies, the shared cancer-testis Ag, **NY-ESO-1**, was demonstrated to be recognized by both Abs and CD8+ T cells. **Gene** expression of **NY-ESO-1** was detected in many tumor types, including melanoma, breast, and lung cancers, but was not found in normal tissues, with the exception of testis. In this study, we describe the identification of MHC class II-restricted T cell epitopes from **NY-ESO-1**. Candidate CD4+ T cell peptides were first identified using HLA-DR4 transgenic mice immunized with the **NY-ESO-1** protein. **NY-ESO-1**-specific CD4+ T cells were then generated from PBMC of a patient with melanoma stimulated with the candidate peptides in vitro. These CD4+ T cells recognized **NY-ESO-1** peptides or protein pulsed on HLA-DR4+ EBV B cells, and also recognized tumor cells expressing HLA-DR4 and **NY-ESO-1**. A 10-mer peptide (VLLKEFTVSG) was recognized by CD4+ T cells. These studies provide new opportunities for developing more effective vaccine strategies by using tumor-specific CD4+ T cells. This approach may be applicable to the identification of CD4+ T cell epitopes from many known tumor Ags recognized by CD8+ T cells.
REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI Identification of CD4+ T cell epitopes from **NY-ESO-1** presented by HLA-DR molecules
SO Journal of Immunology (2000), 165(2), 1153-1159
CODEN: JOIMA3; ISSN: 0022-1767
AB In previous studies, the shared cancer-testis Ag, **NY-ESO-1**, was demonstrated to be recognized by both Abs and CD8+ T cells. **Gene** expression of **NY-ESO-1** was detected in many tumor types, including melanoma, breast, and lung cancers, but was not found in normal tissues, with the exception of testis. In this study, we describe the identification of MHC class II-restricted T cell epitopes from **NY-ESO-1**. Candidate CD4+ T cell peptides were first identified using HLA-DR4 transgenic mice immunized with the **NY-ESO-1** protein. **NY-ESO-1**-specific CD4+ T cells were then generated from PBMC of a patient with melanoma stimulated with the candidate peptides in vitro. These CD4+ T cells recognized **NY-ESO-1** peptides or protein pulsed on HLA-DR4+ EBV B cells, and also recognized tumor cells expressing HLA-DR4 and **NY-ESO-1**. A 10-mer peptide (VLLKEFTVSG) was recognized by CD4+ T cells. These studies provide new opportunities for developing more effective vaccine strategies by using tumor-specific CD4+ T cells. This approach may be applicable to the identification of CD4+ T cell epitopes from many known tumor Ags recognized by CD8+ T cells.
IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(HLA-DR4; identification of CD4+ T cell epitopes from **NY-ESO-1** presented by HLA-DR mols.)
IT CD4-positive T cell
Epitopes
Melanoma
Neoplasm
(identification of CD4+ T cell epitopes from **NY-ESO-1** presented by HLA-DR mols.)
IT Antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(tumor-assocd., **NY-ESO-1**; identification of CD4+ T cell epitopes from **NY-ESO-1**

presented by HLA-DR mols.)
IT 289722-50-5 289722-51-6
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(identification of CD4+ T cell epitopes from NY-ESO -1 presented by HLA-DR mols.)

L10 ANSWER 9 OF 39 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 2000:275293 BIOSIS
DOCUMENT NUMBER: PREV200000275293
TITLE: Induction of anti-tumor immunity by a recombinant adenovirus encoding the cancer-testis antigen NY-ESO-1.
AUTHOR(S): Guo, Zong-Sheng (1); Zeng, Gang (1); Parkhurst, Maria R. (1); Chen, Aaron (1); Hong, Julie A. (1); Wang, Rong-Pu (1); Schrump, David S. (1)
CORPORATE SOURCE: (1) National Cancer Inst, Bethesda, MD USA
SOURCE: Proceedings of the American Association for Cancer Research Annual Meeting, (March, 2000) No. 41, pp. 697. print..
Meeting Info.: 91st Annual Meeting of the American Association for Cancer Research. San Francisco, California, USA April 01-05, 2000
ISSN: 0197-016X.
DOCUMENT TYPE: Conference
LANGUAGE: English
SUMMARY LANGUAGE: English
TI Induction of anti-tumor immunity by a recombinant adenovirus encoding the cancer-testis antigen NY-ESO-1.
SO Proceedings of the American Association for Cancer Research Annual Meeting, (March, 2000) No. 41, pp. 697. print..
Meeting Info.: 91st Annual Meeting of the American Association for Cancer Research. San Francisco,. . .
IT Major Concepts
Molecular Genetics (Biochemistry and Molecular Biophysics); Tumor Biology
IT Diseases
MC-38 colon carcinoma: digestive system disease, immune gene therapy, neoplastic disease
IT Chemicals & Biochemicals
NY-ESO-1 cancer-testis antigen: antitumor immunity induction, recombinant adenovirus encoding
ORGN . . .
Animal Viruses, Viruses, Microorganisms; Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia
ORGN Organism Name
C57BL/6 mouse (Muridae): animal model; adenovirus (Adenoviridae): gene vector
ORGN Organism Superterms
Animal Viruses; Animals; Chordates; Mammals; Microorganisms; Nonhuman Mammals; Nonhuman Vertebrates; Rodents; Vertebrates; Viruses

L10 ANSWER 10 OF 39 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 2000:464470 BIOSIS
DOCUMENT NUMBER: PREV200000464470
TITLE: Immunotherapeutic potential of DNA hypomethylating agents in human melanoma.
AUTHOR(S): Coral, S. (1); Sigalotti, L. (1); Nardi, G. (1); Colizzi, F. (1); Cattarossi, I. (1); Altomonte, M. (1); Maio, M. (1)
CORPORATE SOURCE: (1) Advanced Immunotherapy Unit, Centro di Riferimento Oncologico, I.N.R.C.C.S., Aviano Italy
SOURCE: Journal of Immunotherapy, (September October, 2000) Vol. 23, No. 5, pp. 608. print.
Meeting Info.: 15th Annual Scientific Meeting of the Society for Biological Therapy Seattle, Washington, USA October 26-29, 2000 Society for Biological Therapy .
DOCUMENT TYPE: Conference
LANGUAGE: English
SUMMARY LANGUAGE: English
SO Journal of Immunotherapy, (September October, 2000) Vol. 23, No. 5, pp. 608. print.
Meeting Info.: 15th Annual Scientific Meeting of the Society for Biological. . .
IT . . .
& Biochemicals
5-aza-2'-deoxycytidine: DNA hypomethylating agent, immunotherapeutic potential; GAGE 1-2; GAGE 1-6; HLA-class I antigens: expression; MAGE-1; MAGE-2; MAGE-3; MAGE-4; NY-ESO-1; PRAME; malignant cell accessory molecules: expression; melanoma-associated antigens: expression
IT Alternate Indexing
Melanoma (MeSH)
IT Methods & Equipment
T-cell based immunotherapy: therapeutic method; Western blot: analytical method, detection/labeling techniques, gene mapping; flow cytometry: analytical method, cytophotometry: CB, cytophotometry: CT; reverse transcriptase-polymerase chain reaction: analytical method, polymerase chain reaction
IT Miscellaneous. . .

L10 ANSWER 11 OF 39 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.DUPLICATE 4
ACCESSION NUMBER: 2000421562 EMBASE
TITLE: Peptide vaccination in clinical oncology.
AUTHOR: Jager E.; Jager D.; Knuth A.
CORPORATE SOURCE: Dr. A. Knuth, II. Medizinische Klinik, Hamatologie - Onkologie, Krankenhaus Nordwest, Steinbacher Hohl 2-26, D-60488 Frankfurt/M., Germany
SOURCE: Onkologie, (2000) 23/5 (410-415).
Refs: 60
ISSN: 0378-584X CODEN: ONKOD2
COUNTRY: Germany
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 016 Cancer
026 Immunology, Serology and Transplantation
030 Pharmacology
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English; German
AB Tumor-associated antigens recognized by cellular or humoral effectors of the immune system represent attractive targets for antigen-specific cancer therapy. Different groups of cancer-associated antigens have been

identified inducing cytotoxic T-lymphocyte (CTL) responses in vitro and in vivo: 1) 'Cancer-Testis' (CT) antigens, which are expressed in different tumors and normal testis, 2) melanocyte differentiation antigens, 3) point mutations of normal **genes**, 4) antigens that are overexpressed in malignant tissues, and 5) viral antigens. Clinical studies with peptides derived from these antigens have been initiated to study the induction of specific CTL responses in vivo. Immunological and clinical parameters for the assessment of peptide-specific reactions have been defined, i.e., delayed-type hypersensitivity (DTH), CTL, autoimmune, and tumor regression responses. Early results show that tumor-associated peptides alone induce specific DTH and CTL responses and tumor regression after intradermal administration. GM-CSF was used as an adjuvant to enhance peptide-specific immune reactions by amplification of dermal peptide-presenting dendritic cells. Complete tumor regressions have been observed in the context of measurable peptide-specific CTL. However, in single cases with disease progression after an initial tumor response, either a loss of the respective tumor antigen targeted by CTL or of the presenting MHC class I allele was detected, suggesting immunization-induced immune escape. Based on these observations, cytokines to modify antigen and MHC class I expression in vivo are being tested to prevent immunoselection. Recently, a new CT antigen, **NY-ESO-1**, has been identified with a strategy utilizing spontaneous antibody responses to tumor-associated antigens (SEREX). **NY-ESO-1** is regarded as one of the most immunogenic antigens known today, inducing spontaneous immune responses in 50% of patients with **NY-ESO-1**-expressing cancers. Clinical studies with antigenic constructs to induce both humoral and cellular immune responses will show whether these are more effective for immunotherapy of cancer.

SO Onkologie, (2000) 23/5 (410-415).
Refs: 60
ISSN: 0378-584X CODEN: ONKOD2

AB . . . (CT) antigens, which are expressed in different tumors and normal testis, 2) melanocyte differentiation antigens, 3) point mutations of normal **genes**, 4) antigens that are overexpressed in malignant tissues, and 5) viral antigens. Clinical studies with peptides derived from these antigens. . . modify antigen and MHC class I expression in vivo are being tested to prevent immunoselection. Recently, a new CT antigen, **NY-ESO-1**, has been identified with a strategy utilizing spontaneous antibody responses to tumor-associated antigens (SEREX). **NY-ESO-1** is regarded as one of the most immunogenic antigens known today, inducing spontaneous immune responses in 50% of patients with **NY-ESO-1**-expressing cancers. Clinical studies with antigenic constructs to induce both humoral and cellular immune responses will show whether these are more. . .

CT Medical Descriptors:
*vaccination
*oncology
*cancer immunotherapy
*immune response
lymphocyte function
T lymphocyte
point mutation
gene mutation
tumor regression
tumor escape
delayed hypersensitivity
antibody response
immunogenicity
human
review
*peptide: PD, pharmacology
***ny eso 1: PD, pharmacology**
*tumor antigen: PD, pharmacology
*tumor antigen: DL, intradermal drug administration
*mage 1: PD, pharmacology
*mage 2: PD, pharmacology
*cancer vaccine: PD,. . .

CN **Ny eso 1**

L10 ANSWER 12 OF 39 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 5
ACCESSION NUMBER: 2000:539591 CAPLUS
DOCUMENT NUMBER: 134:114483
TITLE: **NY-ESO-1** tumour associated antigen is a cytoplasmic protein detectable by specific monoclonal antibodies in cell lines and clinical specimens
AUTHOR(S): Schultz-Thater, E.; Noppen, C.; Gudat, F.; Durmuller, U.; Zajac, P.; Kocher, T.; Heberer, M.; Spagnoli, G. C.
CORPORATE SOURCE: Research Division, Department of Surgery, University of Basel, Basel, 4031, Switz.
SOURCE: British Journal of Cancer (2000), 83(2), 204-208
CODEN: BJCAAI; ISSN: 0007-0920
PUBLISHER: Harcourt Publishers Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB **NY-ESO-1 gene** encodes a novel member of the cancer/testis (CT) family of human tumor-assocd. antigens (TAA). Specific monoclonal antibodies (mAb) have identified the corresponding **gene** product in lysates of tumor cell lines as a 22 kDa protein but no data are available concerning its intracellular location or distribution within neoplastic tissues. We have generated **NY-ESO-1** specific mAbs recognizing the target mol. in cytospin prepns. and in sections from clin. tumor specimens. These reagents identify **NY-ESO-1** TAA in melanoma cell lines expressing the specific **gene** as a cytoplasmic protein, sharing the intracellular location of most MAGE TAA. In a series of 12 melanoma specimens, specific staining, limited to neoplastic cells, was detectable in the five cases where **NY-ESO-1 gene** expression was obsd. In two of them over 90% of tumor cells showed evidence of pos. staining. Lower percentages of pos. neoplastic cells ranging between single cells and 50% were obsd. in the remaining tumors. These data suggest that active specific immunotherapies targeting **NY-ESO-1**, alone or in combination with other TAA, could be of high clin. relevance in sizeable subgroups of melanoma patients.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI **NY-ESO-1** tumour associated antigen is a cytoplasmic protein detectable by specific monoclonal antibodies in cell

lines and clinical specimens
SO British Journal of Cancer (2000), 83(2), 204-208
CODEN: BJCAAI; ISSN: 0007-0920
AB **NY-ESO-1 gene** encodes a novel member of the cancer/testis (CT) family of human tumor-assocd. antigens (TAA). Specific monoclonal antibodies (mAb) have identified the corresponding **gene** product in lysates of tumor cell lines as a 22 kDa protein but no data are available concerning its intracellular location or distribution within neoplastic tissues. We have generated **NY-ESO-1** specific mAbs recognizing the target mol. in cytospin prepns. and in sections from clin. tumor specimens. These reagents identify **NY-ESO-1** TAA in melanoma cell lines expressing the specific **gene** as a cytoplasmic protein, sharing the intracellular location of most MAGE TAA. In a series of 12 melanoma specimens, specific staining, limited to neoplastic cells, was detectable in the five cases where **NY-ESO-1 gene** expression was obsd. In two of them over 90% of tumor cells showed evidence of pos. staining. Lower percentages of pos. neoplastic cells ranging between single cells and 50% were obsd. in the remaining tumors. These data suggest that active specific immunotherapies targeting **NY-ESO-1**, alone or in combination with other TAA, could be of high clin. relevance in sizeable subgroups of melanoma patients.
ST melanoma **NY ESO 1** antigen
IT Melanoma
Neoplasm
(**NY-ESO-1** tumor assocd. antigen is a cytoplasmic protein detectable by specific monoclonal antibodies in cell lines and clin. specimens)
IT Antibodies
RL: BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation); PROC (Process)
(monoclonal; prepnl of monoclonal antibodies to **NY-ESO-1** tumor assocd. antigen and use in immunodetection)
IT Antigens
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(tumor-assocd., **NY-ESO-1**; **NY-ESO-1** tumor assocd. antigen is a cytoplasmic protein detectable by specific monoclonal antibodies in cell lines and clin. specimens)

L10 ANSWER 13 OF 39 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 6
ACCESSION NUMBER: 2000:142200 CAPLUS
DOCUMENT NUMBER: 132:320358
TITLE: Expression of cancer-testis antigens in lung cancer: definition of bromodomain testis-specific **gene** (BRDT) as a new CT **gene**, CT9
AUTHOR(S): Scanlan, M. J.; Altorki, N. K.; Gure, A. O.; Williamson, B.; Jungbluth, A.; Chen, Y.-T.; Old, L. J.
CORPORATE SOURCE: Ludwig Institute for Cancer Research, New York Branch at Memorial Sloan-Kettering Cancer Center, New York, NY, USA
SOURCE: Cancer Letters (Shannon, Ireland) (2000), 150(2), 155-164
CODEN: CALEDQ; ISSN: 0304-3835
PUBLISHER: Elsevier Science Ireland Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In an effort to define new cancer-testis (CT) **genes**, we investigated whether BRDT, a testis-restricted member of the RING3 family of transcriptional regulators, is also expressed in cancer. Std. RT-PCR expression anal. detected BRDT transcripts in 12 of 47 cases of non-small cell lung cancer and single cases of both squamous cell carcinoma of the head and neck (1/12) and esophagus (1/12) but not in melanoma or in cancers of the colon, breast, kidney and bladder. Typing of 33 non-small cell lung cancers for coexpression of a panel of CT antigens revealed a high incidence (60%) of MAGE-3 mRNA expression, followed by MAGE-1 (36%), CT7/MAGE-C1 (30%), CT10 (30%), SSX4 (23%), BRDT (21%), **NY-ESO-1** (21%) and HOM-MEL-40/SSX2 (15%). The coexpression pattern of these antigens provides a foundation for developing a polyvalent lung cancer vaccine.
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI Expression of cancer-testis antigens in lung cancer: definition of bromodomain testis-specific **gene** (BRDT) as a new CT **gene**, CT9
SO Cancer Letters (Shannon, Ireland) (2000), 150(2), 155-164
CODEN: CALEDQ; ISSN: 0304-3835
AB In an effort to define new cancer-testis (CT) **genes**, we investigated whether BRDT, a testis-restricted member of the RING3 family of transcriptional regulators, is also expressed in cancer. Std. RT-PCR expression anal. detected BRDT transcripts in 12 of 47 cases of non-small cell lung cancer and single cases of both squamous cell carcinoma of the head and neck (1/12) and esophagus (1/12) but not in melanoma or in cancers of the colon, breast, kidney and bladder. Typing of 33 non-small cell lung cancers for coexpression of a panel of CT antigens revealed a high incidence (60%) of MAGE-3 mRNA expression, followed by MAGE-1 (36%), CT7/MAGE-C1 (30%), CT10 (30%), SSX4 (23%), BRDT (21%), **NY-ESO-1** (21%) and HOM-MEL-40/SSX2 (15%). The coexpression pattern of these antigens provides a foundation for developing a polyvalent lung cancer vaccine.
ST lung cancer testis antigen **gene** BRDT CT9
IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(BRDT/CT9; expression of cancer-testis antigens in human lung cancer and definition of bromodomain testis-specific **gene** (BRDT) as new CT **gene**, CT9)
IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(CT10; expression of cancer-testis antigens in human lung cancer and definition of bromodomain testis-specific **gene** (BRDT) as new CT **gene**, CT9)
IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(CT7/MAGE-C1; expression of cancer-testis antigens in human lung cancer and definition of bromodomain testis-specific **gene** (BRDT) as

new CT gene, CT9)
IT Antigens
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(CT; expression of cancer-testis antigens in human lung cancer and definition of bromodomain testis-specific gene (BRDT) as new CT gene, CT9)
IT Gene, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(HOM-MEL-40/SSX2; expression of cancer-testis antigens in human lung cancer and definition of bromodomain testis-specific gene (BRDT) as new CT gene, CT9)
IT Gene, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(MAGE-1; expression of cancer-testis antigens in human lung cancer and definition of bromodomain testis-specific gene (BRDT) as new CT gene, CT9)
IT Gene, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(MAGE-3; expression of cancer-testis antigens in human lung cancer and definition of bromodomain testis-specific gene (BRDT) as new CT gene, CT9)
IT Gene, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(NY-ESO-1; expression of cancer-testis antigens in human lung cancer and definition of bromodomain testis-specific gene (BRDT) as new CT gene, CT9)
IT Gene, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(SSX4; expression of cancer-testis antigens in human lung cancer and definition of bromodomain testis-specific gene (BRDT) as new CT gene, CT9)
IT Lung, neoplasm
(adenocarcinoma; expression of cancer-testis antigens in human lung cancer and definition of bromodomain testis-specific gene (BRDT) as new CT gene, CT9)
IT Tumor markers
(expression of cancer-testis antigens in human lung cancer and definition of bromodomain testis-specific gene (BRDT) as new CT gene, CT9)
IT Lung, neoplasm
(non-small-cell carcinoma; expression of cancer-testis antigens in human lung cancer and definition of bromodomain testis-specific gene (BRDT) as new CT gene, CT9)
IT Vaccines
(polyvalent, for lung cancer; expression of cancer-testis antigens in human lung cancer and definition of bromodomain testis-specific gene (BRDT) as new CT gene, CT9)
IT Esophagus
Head
Neck, anatomical
(squamous cell carcinoma; expression of cancer-testis antigens in human lung cancer and definition of bromodomain testis-specific gene (BRDT) as new CT gene, CT9)

L10 ANSWER 14 OF 39 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 2000:188593 BIOSIS
DOCUMENT NUMBER: PREV200000188593
TITLE: Expression of cancer-testis antigens in lung cancer: Definition of bromodomain testis-specific gene (BRDT) as a new CT gene, CT9.
AUTHOR(S): Scanlan, Matthew J. (1); Altorki, Nasser K.; Gure, Ali O.; Williamson, Barbara; Jungbluth, Achim; Chen, Yao-Tseng; Old, Lloyd J.
CORPORATE SOURCE: (1) Ludwig Institute for Cancer Research, New York Branch at Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, NY, 10021 USA
SOURCE: Cancer Letters, (March 31, 2000) Vol. 151, No. 2, pp. 155-164.
ISSN: 0304-3835.
DOCUMENT TYPE: Article
LANGUAGE: English
SUMMARY LANGUAGE: English
AB In an effort to define new cancer-testis (CT) genes, we investigated whether BRDT, a testis-restricted member of the RING3 family of transcriptional regulators, is also expressed in cancer. Standard RT-PCR expression analysis detected BRDT transcripts in 12 of 47 cases of non-small cell lung cancer and single cases of both squamous cell carcinoma of the head and neck (1/12) and esophagus (1/12) but not in melanoma or in cancers of the colon, breast, kidney and bladder. Typing of 33 non-small cell lung cancers for coexpression of a panel of CT antigens revealed a high incidence (60%) of MAGE-3 mRNA expression, followed by MAGE-1 (36%), CT7/MAGE-C1 (30%), CT10 (30%), SSX4 (23%), BRDT (21%), NY-ESO-1 (21%) and HOM-MEL-40/SSX2 (15%). The coexpression pattern of these antigens provides a foundation for developing a polyvalent lung cancer vaccine.
TI Expression of cancer-testis antigens in lung cancer: Definition of bromodomain testis-specific gene (BRDT) as a new CT gene , CT9.
SO Cancer Letters, (March 31, 2000) Vol. 151, No. 2, pp. 155-164.
ISSN: 0304-3835.
AB In an effort to define new cancer-testis (CT) genes, we investigated whether BRDT, a testis-restricted member of the RING3 family of transcriptional regulators, is also expressed in cancer. Standard. . . a high incidence (60%) of MAGE-3 mRNA expression, followed by MAGE-1 (36%), CT7/MAGE-C1 (30%), CT10 (30%), SSX4 (23%), BRDT (21%), NY-ESO-1 (21%) and HOM-MEL-40/SSX2 (15%). The coexpression pattern of these antigens provides a foundation for developing a polyvalent lung cancer vaccine.
IT . . .
squamous cell carcinoma of the head and neck: neoplastic disease
IT Chemicals & Biochemicals
BRDT; CT10; CT7/MAGE-1; HOM-MEL-40/SSX2; MAGE-1; MAGE-3; NY-ESO-1; SSX4; cancer-testis antigens: expression; mRNA (messenger RNA): expression; human BRDT gene (Hominidae): bromodomain testis-specific gene; human CT9 gene (Hominidae): cancer testis gene

IT Alternate Indexing
Lung Neoplasms (MeSH); Lung Neoplasms (MeSH); Carcinoma, Non-Small-Cell Lung (MeSH); Head and Neck Neoplasms (MeSH); Carcinoma, Squamous. . .

L10 ANSWER 15 OF 39 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 7
ACCESSION NUMBER: 2000:467715 CAPLUS
DOCUMENT NUMBER: 134:191841
TITLE: Cancer immunotherapy in clinical oncology
AUTHOR(S): Knuth, Alexander; Jager, Dirk; Jager, Elke
CORPORATE SOURCE: Krankenhaus Nordwest, II Medizinische Klinik, Hamatologie-Onkologie, Frankfurt am Main, 60488, Germany
SOURCE: Cancer Chemotherapy and Pharmacology (2000), 46(Suppl.), S46-S51
CODEN: CCPHDZ; ISSN: 0344-5704
PUBLISHER: Springer-Verlag
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with 60 refs. The identification of tumor-assocd. antigens recognized by cellular or humoral effectors of the immune system has opened new perspectives for cancer therapy. Different groups of cancer-assocd. antigens have been described as targets for cytotoxic T lymphocytes (CTLs) in vitro and in vivo: 1) cancer-testis (CT) antigens, which are expressed in different tumors and normal testis; 2) melanocyte differentiation antigens; 3) point mutations of normal **genes**; 4) antigens that are overexpressed in malignant tissues; and 5) viral antigens. Clin. studies with peptides derived from these antigens have been initiated to induce specific CTL responses in vivo. Immunol. and clin. parameters for the assessment of peptide-specific reactions have been defined, i.e., delayed-type hypersensitivity (DTH), CTL, autoimmune, and tumor regression responses. Preliminary results demonstrate that tumor-assocd. peptides alone elicit specific DTH and CTL responses leading to tumor regression after intradermal injection. Granulocyte-macrophage colony-stimulating factor (GM-CSF) was proven effective in enhancing peptide-specific immune reactions by amplification of dermal peptide-presenting dendritic cells. Long-lasting complete tumor regressions have been obsd. after induction of peptide-specific CTLs. However, in single cases with disease progression after an initial tumor response, either a loss of the resp. tumor antigen targeted by CTLs or of the presenting major histocompatibility complex (MHC) class I allele was detected as a mechanism of immune escape under immunization. Based on these observations, cytokines to enhance antigen and MHC class I expression in vivo are being evaluated to prevent immunoselection. Recently, a strategy utilizing spontaneous antibody responses to tumor-assocd. antigens (SEREX) has led to the identification of a new CT antigen, **NY-ESO-1**, which is regarded as one of the most immunogenic antigens known today inducing spontaneous immune responses in 50% of patients with **NY-ESO-1** -expressing cancers. Clin. studies involving antigenic constructs that induce both antibody and CTL responses will show whether these are more effective for immunotherapy of cancer.
REFERENCE COUNT: 60 THERE ARE 60 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
SO Cancer Chemotherapy and Pharmacology (2000), 46(Suppl.), S46-S51
CODEN: CCPHDZ; ISSN: 0344-5704
AB A review with 60 refs. The identification of tumor-assocd. antigens recognized by cellular or humoral effectors of the immune system has opened new perspectives for cancer therapy. Different groups of cancer-assocd. antigens have been described as targets for cytotoxic T lymphocytes (CTLs) in vitro and in vivo: 1) cancer-testis (CT) antigens, which are expressed in different tumors and normal testis; 2) melanocyte differentiation antigens; 3) point mutations of normal **genes**; 4) antigens that are overexpressed in malignant tissues; and 5) viral antigens. Clin. studies with peptides derived from these antigens have been initiated to induce specific CTL responses in vivo. Immunol. and clin. parameters for the assessment of peptide-specific reactions have been defined, i.e., delayed-type hypersensitivity (DTH), CTL, autoimmune, and tumor regression responses. Preliminary results demonstrate that tumor-assocd. peptides alone elicit specific DTH and CTL responses leading to tumor regression after intradermal injection. Granulocyte-macrophage colony-stimulating factor (GM-CSF) was proven effective in enhancing peptide-specific immune reactions by amplification of dermal peptide-presenting dendritic cells. Long-lasting complete tumor regressions have been obsd. after induction of peptide-specific CTLs. However, in single cases with disease progression after an initial tumor response, either a loss of the resp. tumor antigen targeted by CTLs or of the presenting major histocompatibility complex (MHC) class I allele was detected as a mechanism of immune escape under immunization. Based on these observations, cytokines to enhance antigen and MHC class I expression in vivo are being evaluated to prevent immunoselection. Recently, a strategy utilizing spontaneous antibody responses to tumor-assocd. antigens (SEREX) has led to the identification of a new CT antigen, **NY-ESO-1**, which is regarded as one of the most immunogenic antigens known today inducing spontaneous immune responses in 50% of patients with **NY-ESO-1** -expressing cancers. Clin. studies involving antigenic constructs that induce both antibody and CTL responses will show whether these are more effective for immunotherapy of cancer.

L10 ANSWER 16 OF 39 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:656232 CAPLUS
DOCUMENT NUMBER: 133:250999
TITLE: Identification of the **NY-ESO-1 gene** product as cytoplasmic tumor associated antigen
AUTHOR(S): Kocher, Th.; Noppen, C.; Schultz-Thater, E.; Gudat, F.; Harder, F.; Spagnoli, G. C.; Heberer, M.
CORPORATE SOURCE: Chirurgische Forschungsabteilung, Departement Chirurgie der Universitat Basel, Basel, CH-4031, Switz.
SOURCE: Chirurgisches Forum fuer Experimentelle und Klinische Forschung (2000) 29-33
CODEN: CFEKA7; ISSN: 0303-6227
PUBLISHER: Springer-Verlag
DOCUMENT TYPE: Journal
LANGUAGE: German
AB **NY-ESO-1 gene** encodes a novel member of the cancer/testis family of human tumor assocd. antigens (TAA). Detection of the corresponding **NY-ESO-1** protein is essential to evaluate whether this TAA could be of importance for future vaccine prepns. The authors therefore have generated **NY-ESO-1** specific monoclonal antibodies (mAbs)

recognizing the target mol. in sections from tumor specimens. Recombinant NY-ESO-1 fusion protein was produced and used to immunize BALB/c mice. Subsequently, NY-ESO-1 specific mAbs recognizing recombinant as well as native gene products were generated, 12 fresh frozen melanoma sections were studied by RT-PCR and immunohistochem. NY-ESO-1 gene expression was tested by 25 cycles RT-PCR in the presence of primer pairs specific for .beta.-actin or NY-ESO-1 gene. Immunohistochem. was carried out using the produced NY-ESO-1-specific mAbs. In RT-PCR assays NY-ESO-1 transcripts were amplified in 5 out of 12 melanoma specimens, while pos. control .beta.-actin gene was found to be expressed in all samples. In this series of 12 melanoma specimens, specific staining was detectable in the 5 cases where NY-ESO-1 gene expression was obsd. In 2 of them over 90% of tumor cells showed evidence of pos. staining. Lower percentages of pos. neoplastic cells ranging between single cells and 50% were obsd. in the remaining 3 melanomas. Most importantly, staining, detectable in the cell cytoplasm, appeared to be limited to cancer cells. Conclusion: NY-ESO-1 gene expression can be detected in melanomas as well as in other malignancies such as esophageal, breast, lung, bladder and prostate cancer. We have generated NY-ESO-1 specific monoclonal antibodies recognizing the NY-ESO-1 TAA in the cell cytoplasm of melanoma specimens. These data suggest that active specific immunotherapies targeting NY-ESO-1 TAA, alone or in combination with other TAA could be of clin. relevance in some of the melanoma patients.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Identification of the NY-ESO-1 gene product as cytoplasmic tumor associated antigen

SO Chirurgisches Forum fuer Experimentelle und Klinische Forschung (2000) 29-33
CODEN: CFEKA7; ISSN: 0303-6227

AB NY-ESO-1 gene encodes a novel member of the cancer/testis family of human tumor assocd. antigens (TAA). Detection of the corresponding NY-ESO-1 protein is essential to evaluate whether this TAA could be of importance for future vaccine prepns. The authors therefore have generated NY-ESO-1 specific monoclonal antibodies (mAbs) recognizing the target mol. in sections from tumor specimens. Recombinant NY-ESO-1 fusion protein was produced and used to immunize BALB/c mice. Subsequently, NY-ESO-1 specific mAbs recognizing recombinant as well as native gene products were generated, 12 fresh frozen melanoma sections were studied by RT-PCR and immunohistochem. NY-ESO-1 gene expression was tested by 25 cycles RT-PCR in the presence of primer pairs specific for .beta.-actin or NY-ESO-1 gene. Immunohistochem. was carried out using the produced NY-ESO-1-specific mAbs. In RT-PCR assays NY-ESO-1 transcripts were amplified in 5 out of 12 melanoma specimens, while pos. control .beta.-actin gene was found to be expressed in all samples. In this series of 12 melanoma specimens, specific staining was detectable in the 5 cases where NY-ESO-1 gene expression was obsd. In 2 of them over 90% of tumor cells showed evidence of pos. staining. Lower percentages of pos. neoplastic cells ranging between single cells and 50% were obsd. in the remaining 3 melanomas. Most importantly, staining, detectable in the cell cytoplasm, appeared to be limited to cancer cells. Conclusion: NY-ESO-1 gene expression can be detected in melanomas as well as in other malignancies such as esophageal, breast, lung, bladder and prostate cancer. We have generated NY-ESO-1 specific monoclonal antibodies recognizing the NY-ESO-1 TAA in the cell cytoplasm of melanoma specimens. These data suggest that active specific immunotherapies targeting NY-ESO-1 TAA, alone or in combination with other TAA could be of clin. relevance in some of the melanoma patients.

ST tumor specific antigen NYESO1 gene melanoma

IT Melanoma
(NY-ESO-1 gene product, a cytoplasmic tumor assocd. antigen)

IT Gene, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(NY-ESO-1 gene product, a cytoplasmic tumor assocd. antigen)

IT Antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(tumor-assocd.; NY-ESO-1 gene product, a cytoplasmic tumor assocd. antigen)

L10 ANSWER 17 OF 39 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:690967 CAPLUS
DOCUMENT NUMBER: 131:335782
TITLE: Cloning, tissue distribution, and immunol. characterization of NY-ESO-1
INVENTOR(S): Stockert, Elisabeth; Jager, Elke; Chen, Yao-Tseng; Scanlan, Matthew; Alexander, Knuth; Old, Lloyd J.; Gure, Ali; Ritter, Gerd
PATENT ASSIGNEE(S): Ludwig Institute for Cancer Research, USA
SOURCE: PCT Int. Appl., 49 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 8
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
WO 9953938	A1	19991028	WO 1999-US6875	19990324	<--
W: AU, CA, CN, JP, KR, NZ, ZA					
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					
US 6252052	B1	20010626	US 1998-62422	19980417	
CA 2325605	AA	19991028	CA 1999-2325605	19990324	<--
AU 9933706	A1	19991108	AU 1999-33706	19990324	<--
EP 1071443	A1	20010131	EP 1999-915110	19990324	
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,					

IE, FI

PRIORITY APPLN. INFO.: US 1998-62422 A 19980417
US 1998-165546 A 19981002
US 1996-725182 A2 19961003
US 1997-937263 A2 19970915
WO 1999-US6875 W 19990324

AB The authors disclose the sequence characterization of NY-ESO-1, a tumor-assocd. antigen isolated from esophageal carcinoma. The authors provide distribution of NY-ESO-1 in normal and malignant tissue. In addn., the NY-ESO-1 antigen is mapped for epitopes stimulating MHC class I- and class II-restricted responses in T-cells. These peptides are useful in different therapeutic and diagnostic contexts.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Cloning, tissue distribution, and immunol. characterization of NY-ESO-1

PI WO 9953938 A1 19991028

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI WO 9953938	A1	19991028	WO 1999-US6875	19990324	<--
W: AU, CA, CN, JP, KR, NZ, ZA					
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					
US 6252052	B1	20010626	US 1998-62422	19980417	
CA 2325605	AA	19991028	CA 1999-2325605	19990324	<--
AU 9933706	A1	19991108	AU 1999-33706	19990324	<--
EP 1071443	A1	20010131	EP 1999-915110	19990324	
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI					

AB The authors disclose the sequence characterization of NY-ESO-1, a tumor-assocd. antigen isolated from esophageal carcinoma. The authors provide distribution of NY-ESO-1 in normal and malignant tissue. In addn., the NY-ESO-1 antigen is mapped for epitopes stimulating MHC class I- and class II-restricted responses in T-cells. These peptides are useful in different therapeutic and diagnostic contexts.

ST sequence tumor antigen NY ESO 1; peptide epitope T cell NY ESO 1 antigen

IT Hybridoma
(B-cell; for antibodies to NY-ESO-1 antigen)

IT Histocompatibility antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(HLA-A1; sequences for NY-ESO-1 peptides binding to)

IT Histocompatibility antigens
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(HLA-A2, complexes, with NY-ESO-1 peptides; stimulation of cytotoxic T-cells by)

IT Histocompatibility antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(HLA-A24; sequences for NY-ESO-1 peptides binding to)

IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(HLA-A2; epitopes of NY-ESO-1 antigen for cytotoxic T-cells restricted by)

IT Histocompatibility antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(HLA-A3; sequences for NY-ESO-1 peptides binding to)

IT Histocompatibility antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(HLA-B, HLA-B52; sequences for NY-ESO-1 peptides binding to)

IT Histocompatibility antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(HLA-B, HLA-B8; sequences for NY-ESO-1 peptides binding to)

IT Histocompatibility antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(HLA-B35; sequences for NY-ESO-1 peptides binding to)

IT Histocompatibility antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(HLA-B44; sequences for NY-ESO-1 peptides binding to)

IT Histocompatibility antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(HLA-B7; sequences for NY-ESO-1 peptides binding to)

IT Histocompatibility antigens
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(HLA-DR, HLA-DR53 complexes, with NY-ESO-1 peptides; stimulation of helper T-cells by)

IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(HLA-DR, HLA-DR53; epitopes of NY-ESO-1 antigen for CD4-pos. T-cells restricted by)

IT Tumor markers
(HLA-DR53 complexed with antigenic peptides of NY-ESO-1 as)

IT Animal cell line
(NW-MEL-38; gene expression for NY-ESO-1 antigen in)

IT Animal cell line
(SK-MEL-19; gene expression for NY-ESO-1 antigen in)

IT Animal cell line
(SK-MEL-37; gene expression for NY-ESO-1 antigen in)

IT Cell activation
Cell proliferation
(T cell; by HLA-DR53 complexes with antigenic peptides of NY-ESO-1 antigen)

IT T cell (lymphocyte)
(activation; by HLA-DR53 complexes with antigenic peptides of NY-ESO-1 antigen)
IT Lymphoma
(antibodies to NY-ESO-1 antigen for screening for)
IT Diagnosis
(cancer; HLA-DR53 complexed with antigenic peptides of NY-ESO-1 for)
IT Antibodies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(chimeric; to NY-ESO-1 antigen)
IT Radionuclides, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(conjugates with antibodies; for detection of HLA-DR53 complexes with antigenic peptides of NY-ESO-1)
IT Enzymes, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(conjugates, with antibodies; for detection of HLA-DR53 complexes with antigenic peptides of NY-ESO-1)
IT T cell (lymphocyte)
(cytotoxic; epitope mapping of NY-ESO-1 antigen for)
IT CD4-positive T cell
(epitope mapping of NY-ESO-1 antigen for)
IT Peptides, biological studies
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(epitope mapping of NY-ESO-1 antigen for cytotoxic and helper T-cells)
IT Genetic vectors
(for NY-ESO-1 antigen)
IT Gene, animal
RL: PRP (Properties)
(for NY-ESO-1 antigen)
IT Protein sequences
cDNA sequences
(for NY-ESO-1 antigen of humans)
IT mRNA
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(for NY-ESO-1 antigen of humans)
IT Bioassay
(for cancer diagnosis with helper T-cells to NY-ESO-1)
IT Genetic methods
(for expression of antigenic peptide of NY-ESO-1 and HLA-DR53)
IT Immunoglobulins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(fragments; to NY-ESO-1 antigen)
IT Lung, neoplasm
Melanoma
Ovary
Ovary, neoplasm
Testis
Thyroid gland, neoplasm
(gene expression for NY-ESO-1 antigen in)
IT T cell (lymphocyte)
(helper cell/inducer, TH1; epitope mapping of NY-ESO-1 antigen for)
IT Liver, neoplasm
(hepatoma; antibodies to NY-ESO-1 antigen for screening for)
IT Antibodies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(humanized; to NY-ESO-1 antigen)
IT Drug delivery systems
(immunotoxins; to NY-ESO-1 for therapy of cancer)
IT Antibodies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(labeled; for detection of HLA-DR53 complexes with antigenic peptides of NY-ESO-1)
IT Antibodies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(monoclonal, labeled; for detection of HLA-DR53 complexes with antigenic peptides of NY-ESO-1)
IT Antibodies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(monoclonal; to NY-ESO-1 antigen)
IT Protein motifs
(myristoylation site; for NY-ESO-1 antigen)
IT Bladder
Mammary gland
Prostate gland
(neoplasm; gene expression for NY-ESO-1 antigen in)
IT Epitopes
(of NY-ESO-1 antigen for cytotoxic and helper T-cells)
IT Immunoassay
(of antibodies to NY-ESO-1 antigen)
IT Prognosis
(of cancer with HLA-DR53 complexed with antigenic peptides of NY-ESO-1 and NY-ESO-1-specific helper T-cells)
IT Immunostimulation
(of helper T-cells with HLA-DR53 complexed with antigenic peptides of NY-ESO-1)
IT Protein motifs
(phosphorylation site; for NY-ESO-1 antigen)
IT Body fluid
Exudate
(prognosis of cancer by anal. of HLA-DR53 complexed with antigenic peptides of NY-ESO-1 and NY-ESO-1-specific helper T-cells in)
IT T cell (lymphocyte)

(proliferation; by HLA-DR53 complexes with antigenic peptides of NY-ESO-1 antigen)
IT Esophagus
(squamous cell carcinoma; cloning, tissue distribution, and immunol. characterization of NY-ESO-1 antigen from)
IT Antibodies
RL: ANT (Analyte); ARG (Analytical reagent use); BOC (Biological occurrence); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(to NY-ESO-1 antigen and peptide complexes with MHC class II in human tumors)
IT Cell
(transgenic; for expression of NY-ESO-1 and its antigenic peptides)
IT Antigens
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(tumor-assocd., NY-ESO-1; cloning, tissue distribution, and immunol. characterization of)
IT Vaccines
Vaccines
(tumor; HLA-DR53-restricted peptides of NY-ESO-1 antigen in)
IT Antitumor agents
Antitumor agents
(vaccines; HLA-DR53-restricted peptides of NY-ESO-1 antigen in)
IT 188929-68-2 249604-09-9 249604-10-2
RL: PRP (Properties)
(amino acid sequence; of antibodies to NY-ESO-1 antigen)
IT 247244-48-0, AADHRQLQLSISSCLQQL peptide+ 247244-49-1, VLLKEFTVSGNILTIRLT peptide+ 247244-50-4, PLPVPGVLLKEFTVSGNI peptide+ 247244-51-5, GAASGLNGCCRCGARGPE peptide+ 247244-52-6, SRLLEFYLAMPFATPMEA peptide+ 247244-53-7, TVSGNILTIRLTAADHRQ peptide+
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(epitopes of NY-ESO-1 antigen for CD4-pos. T-cells)
IT 249604-25-9, PN: WO9953938 SEQID: 2 unclaimed DNA 249604-26-0, PN: WO9953938 SEQID: 3 unclaimed DNA
RL: PRP (Properties)
(unclaimed nucleotide sequence; cloning, tissue distribution, and immunol. characterization of NY-ESO-1)
IT 202815-16-5 202815-17-6 202815-18-7 248909-38-8 248909-39-9
248909-40-2 248909-41-3 248909-43-5 248909-44-6 248909-45-7
248909-46-8 248909-47-9 248909-48-0 248909-49-1 248909-50-4
248909-51-5 248909-52-6 248909-53-7 248909-54-8 248909-55-9
248909-56-0 248909-57-1 248909-58-2 248909-59-3 248909-60-6
248909-61-7 248909-62-8 248909-63-9 248909-64-0 248909-65-1
248909-66-2 248909-67-3 248909-68-4 248909-69-5 248909-70-8
248909-71-9 248909-72-0
RL: PRP (Properties)
(unclaimed sequence; cloning, tissue distribution, and immunol. characterization of NY-ESO-1)

L10 ANSWER 18 OF 39 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:614081 CAPLUS
DOCUMENT NUMBER: 131:224456
TITLE: Compositions and methods for gene-based vaccines to provoke T cell responses
INVENTOR(S): Roberts, Bruce L.
PATENT ASSIGNEE(S): Genzyme Corporation, USA
SOURCE: PCT Int. Appl., 83 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
WO 9947641	A1	19990923	WO 1999-US6030	19990319	<--
W: AU, CA, JP, US					
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					
CA 2322659	AA	19990923	CA 1999-2322659	19990319	<--
AU 9931022	A1	19991011	AU 1999-31022	19990319	<--
EP 1064354	A1	20010103	EP 1999-912709	19990319	
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI					
JP 2002506633	T2	20020305	JP 2000-536824	19990319	

PRIORITY APPLN. INFO.: US 1998-78725P P 19980320
WO 1999-US6030 W 19990319

AB This invention provides a polynucleotide encoding an antigen that is processed and presented with an MHC Class I mol. on an antigen-presenting cell (APC) and an antigen that is processed and presented with an MHC Class II mol. on the APC. It is beneficial to utilize both pathways, i.e., NHC class I and class II presenting pathways, in the same antigen-presenting cell, to modulate a humoral and a cellular immune response in a subject against a given antigen. Nucleotide sequences are also included encoding a peptide motif that promotes retention of the encoded antigen in the endoplasmic reticulum. Compns. contg. these polynucleotides are further provided by this invention. Methods of increasing presentation of a peptide on the surface of an APC, and APCs produced by the methods, are further provided. Also provided are diagnostic and immunomodulatory methods using polynucleotides, APCs, and immune effector cells of the invention.
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI Compositions and methods for gene-based vaccines to provoke T cell responses
PI WO 9947641 A1 19990923

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI WO 9947641	A1	19990923	WO 1999-US6030	19990319	<--
W: AU, CA, JP, US					
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					

CA 2322659 AA 19990923 CA 1999-2322659 19990319 <--
AU 9931022 A1 19991011 AU 1999-31022 19990319 <--
EP 1064354 A1 20010103 EP 1999-912709 19990319
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI
JP 2002506633 T2 20020305 JP 2000-536824 19990319
ST antigen gene based vaccine T cell response
IT Antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(17-1A; compns. and methods for gene-based vaccines to provoke T cell responses)
IT Antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(MART-1; compns. and methods for gene-based vaccines to provoke T cell responses)
IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(MHC (major histocompatibility complex), class I, antigen presentation using both MHC class II pathway and; compns. and methods for gene-based vaccines to provoke T cell responses)
IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(MHC (major histocompatibility complex), class II, antigen presentation using both MHC class I pathway and; compns. and methods for gene-based vaccines to provoke T cell responses)
IT Antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(NY-ESO-1; compns. and methods for gene-based vaccines to provoke T cell responses)
IT Antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(PSMA (prostate-specific membrane antigen); compns. and methods for gene-based vaccines to provoke T cell responses)
IT Cell activation
(T cell; compns. and methods for gene-based vaccines to provoke T cell responses)
IT Proteins, specific or class
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(TRP-1 (tyrosinase-related protein 1); compns. and methods for gene-based vaccines to provoke T cell responses)
IT Proteins, specific or class
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(TRP-2 (tyrosinase-related protein 2); compns. and methods for gene-based vaccines to provoke T cell responses)
IT T cell (lymphocyte)
(activation; compns. and methods for gene-based vaccines to provoke T cell responses)
IT Cytokines
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(co-stimulation with; compns. and methods for gene-based vaccines to provoke T cell responses)
IT Antigen presentation
Antigen-presenting cell
Dendritic cell
Immunotherapy
(compns. and methods for gene-based vaccines to provoke T cell responses)
IT Antigens
Carcinoembryonic antigen
Prostate-specific antigen
neu (receptor)
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(compns. and methods for gene-based vaccines to provoke T cell responses)
IT Protein motifs
(endoplasmic reticulum-retention; compns. and methods for gene-based vaccines to provoke T cell responses)
IT Mucins
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(episialins; compns. and methods for gene-based vaccines to provoke T cell responses)
IT Glycoproteins, specific or class
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(gp100; compns. and methods for gene-based vaccines to provoke T cell responses)
IT Endoplasmic reticulum
(motif for retention of antigen in; compns. and methods for gene-based vaccines to provoke T cell responses)
IT Antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(surface; compns. and methods for gene-based vaccines to provoke T cell responses)
IT Vaccines
(synthetic; compns. and methods for gene-based vaccines to provoke T cell responses)
IT Antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(tumor-assocd.; compns. and methods for gene-based vaccines

to provoke T cell responses)
IT 9002-10-2, Tyrosinase
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(compns. and methods for **gene**-based vaccines to provoke T cell responses)
IT 113516-56-6 129623-52-5 132328-28-0 140675-11-2 154511-01-0 200405-35-2 244050-76-8 244050-77-9 244050-78-0 244050-79-1 244050-80-4
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(motif for antigen retention in endoplasmic reticulum; compns. and methods for **gene**-based vaccines to provoke T cell responses)

L10 ANSWER 19 OF 39 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:613722 CAPLUS
DOCUMENT NUMBER: 131:241971
TITLE: Compositions and methods for enhanced antigen delivery to antigen presenting cells in vivo
INVENTOR(S): Perricone, Michael A.; Roberts, Bruce L.
PATENT ASSIGNEE(S): Genzyme Corporation, USA
SOURCE: PCT Int. Appl., 51 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9947179	A1	19990923	WO 1999-US6071	19990319 <--
W: AU, CA, JP, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2322699	AA	19990923	CA 1999-2322699	19990319 <--
AU 9931939	A1	19991011	AU 1999-31939	19990319 <--
EP 1071470	A1	20010131	EP 1999-913986	19990319
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2002506834	T2	20020305	JP 2000-536418	19990319

PRIORITY APPLN. INFO.: US 1998-78909P P 19980320
WO 1999-US6071 W 19990319

AB The present invention provides compns. and methods for enhancing site-specific in vivo delivery of tumor assocd. antigens. Thus, in one aspect, this invention provides a method of recruiting antigen presenting cells (APCs) to a predetd. site in a subject. The compns. and methods of recruiting APCs to a predetd. site is accomplished by administration of APC recruitment or proliferation factor including a proinflammatory agent, a chemotactic agent, a growth factor or a mitogenic factor, e.g. GM-CSF, Sepragel, interleukin 4, or macrophage inflammatory protein 3.alpha.. Methods of augmenting transduction of a transgene in vivo are also provided by this invention.
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
PI WO 9947179 A1 19990923
PATENT NO. KIND DATE APPLICATION NO. DATE
PI WO 9947179 A1 19990923 WO 1999-US6071 19990319 <--
W: AU, CA, JP, US
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
CA 2322699 AA 19990923 CA 1999-2322699 19990319 <--
AU 9931939 A1 19991011 AU 1999-31939 19990319 <--
EP 1071470 A1 20010131 EP 1999-913986 19990319
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI
JP 2002506834 T2 20020305 JP 2000-536418 19990319
IT **Gene**, animal
Transgene
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(delivery; compns. and methods using antigen presenting cell recruitment and proliferation factors for enhancement of site-specific delivery of tumor-assocd. antigen)
IT Drug delivery systems
(**gene**; compns. and methods using antigen presenting cell recruitment and proliferation factors for enhancement of site-specific delivery of tumor-assocd. antigen)
IT Antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(tumor-assocd., **NY-ESO-1**; compns. and methods using antigen presenting cell recruitment and proliferation factors for enhancement of site-specific delivery of tumor-assocd. antigen)

L10 ANSWER 20 OF 39 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:244754 CAPLUS
DOCUMENT NUMBER: 130:280849
TITLE: Breast and melanoma-shared tumor antigen **NY ESO-1**/CAG-3 and T cell responses to antigenic peptides translated from different open reading frames
INVENTOR(S): Wang, Rong Fu; Rosenberg, Steven A.
PATENT ASSIGNEE(S): United States Dept. of Health and Human Services, USA
SOURCE: PCT Int. Appl., 88 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9918206	A2	19990415	WO 1998-US19609	19980921 <--
WO 9918206	A3	19990805		
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT,				

UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AU 9895720 A1 19990427 AU 1998-95720 19980921 <--
EP 1021535 A2 20000726 EP 1998-949385 19980921
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI

PRIORITY APPLN. INFO.: US 1997-61428P P 19971008
WO 1998-US19609 W 19980921

OTHER SOURCE(S): MARPAT 130:280849

AB The present invention discloses the identification, isolation, and cloning of a **gene** encoding a novel cancer antigen **NY ESO-1**/CAG-3 and peptides thereof derived from various open reading frames from the **NY ESO-1** **gene**. The novel cancer antigen and peptides are recognized by cytotoxic T lymphocytes (CTL) in an HLA-restricted manner. Screening a cDNA library from the 586mel cell line using CTL clones derived from melanoma-recognizing TIL586 cells resulted in the isolation of a **gene**, CAG-3 (cancer Ag **gene** 3). Sequence anal. revealed that CAG-3 encodes an open reading frame identical to **NY-ESO-1**, which was recently reported to be recognized by autologous serum from a patient with esophageal cancer. Thus, **NY-ESO-1** appears to be an immune target for both Ab- and T cell-mediated responses. Significantly, **NY-ESO-1**-specific CTL clones were capable of recognizing two HLA-A31-pos. fresh and cultured breast tumors. A 10-mer antigenic peptide ESO10-53 (ASGPGGGAPR) was identified from the normal open reading frame of **NY-ESO-1** based on its ability to sensitize HLA-A31-pos. target cells for cytokine release and specific lysis. Interestingly, two addnl. CTL clones that were sensitized with **NY-ESO-1** recognized two overlapping antigenic peptides derived from an alternative open reading frame of the same **gene**. These findings indicate that CTLs simultaneously responded to two different **gene** products translated from the normal and alternative reading frames of the same **gene**. The products of the **gene** are promising candidates for immunotherapeutic strategies for the prevention, treatment and diagnosis of patients with cancer.

TI Breast and melanoma-shared tumor antigen **NY ESO-1**/CAG-3 and T cell responses to antigenic peptides translated from different open reading frames

PI WO 9918206 A2 **19990415**

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
WO 9918206	A2	19990415	WO 1998-US19609	19980921	<--
WO 9918206	A3	19990805			

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AU 9895720 A1 19990427 AU 1998-95720 19980921 <--
EP 1021535 A2 20000726 EP 1998-949385 19980921
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI

AB The present invention discloses the identification, isolation, and cloning of a **gene** encoding a novel cancer antigen **NY ESO-1**/CAG-3 and peptides thereof derived from various open reading frames from the **NY ESO-1** **gene**. The novel cancer antigen and peptides are recognized by cytotoxic T lymphocytes (CTL) in an HLA-restricted manner. Screening a cDNA library from the 586mel cell line using CTL clones derived from melanoma-recognizing TIL586 cells resulted in the isolation of a **gene**, CAG-3 (cancer Ag **gene** 3). Sequence anal. revealed that CAG-3 encodes an open reading frame identical to **NY-ESO-1**, which was recently reported to be recognized by autologous serum from a patient with esophageal cancer. Thus, **NY-ESO-1** appears to be an immune target for both Ab- and T cell-mediated responses. Significantly, **NY-ESO-1**-specific CTL clones were capable of recognizing two HLA-A31-pos. fresh and cultured breast tumors. A 10-mer antigenic peptide ESO10-53 (ASGPGGGAPR) was identified from the normal open reading frame of **NY-ESO-1** based on its ability to sensitize HLA-A31-pos. target cells for cytokine release and specific lysis. Interestingly, two addnl. CTL clones that were sensitized with **NY-ESO-1** recognized two overlapping antigenic peptides derived from an alternative open reading frame of the same **gene**. These findings indicate that CTLs simultaneously responded to two different **gene** products translated from the normal and alternative reading frames of the same **gene**. The products of the **gene** are promising candidates for immunotherapeutic strategies for the prevention, treatment and diagnosis of patients with cancer.

ST **NYESO1** tumor antigen T cell epitope alternative ORF; sequence **NYESO1** tumor antigen cDNA human alternative ORF; cancer diagnosis treatment **NYESO1** tumor antigen

IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(HLA, class I; breast and melanoma-shared tumor antigen **NY ESO-1**/CAG-3 and T cell responses to antigenic peptides translated from different open reading frames)

IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(HLA-A11; breast and melanoma-shared tumor antigen **NY ESO-1**/CAG-3 and T cell responses to antigenic peptides translated from different open reading frames)

IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(HLA-A3; breast and melanoma-shared tumor antigen **NY ESO-1**/CAG-3 and T cell responses to antigenic peptides translated from different open reading frames)

IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(HLA-A; breast and melanoma-shared tumor antigen **NY**

ESO-1/CAG-3 and T cell responses to antigenic
peptides translated from different open reading frames)
IT Histocompatibility antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL
(Biological study); PROC (Process)
(HLA; breast and melanoma-shared tumor antigen NY ESO
-1/CAG-3 and T cell responses to antigenic peptides
translated from different open reading frames)
IT Gene, animal
RL: ADV (Adverse effect, including toxicity); BPN (Biosynthetic
preparation); PRP (Properties); THU (Therapeutic use); BIOL (Biological
study); PREP (Preparation); USES (Uses)
(NY ESO-1/CAG-1; breast and
melanoma-shared tumor antigen NY ESO-1
/CAG-3 and T cell responses to antigenic peptides translated from
different open reading frames)
IT Carcinoma
(adenocarcinoma; breast and melanoma-shared tumor antigen NY
ESO-1/CAG-3 and T cell responses to antigenic
peptides translated from different open reading frames)
IT Antitumor agents
Epitopes
Hodgkin's disease
Kidney, neoplasm
Leukemia
Liver, neoplasm
Lung, neoplasm
Melanocyte
Melanoma
Molecular cloning
Ovary, neoplasm
Pancreas, neoplasm
Retroviral vectors
Sarcoma
Uterus, neoplasm
Virus vectors
(breast and melanoma-shared tumor antigen NY ESO-
1/CAG-3 and T cell responses to antigenic peptides translated
from different open reading frames)
IT Antibodies
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical
study); BIOL (Biological study); USES (Uses)
(breast and melanoma-shared tumor antigen NY ESO-
1/CAG-3 and T cell responses to antigenic peptides translated
from different open reading frames)
IT Antisense oligonucleotides
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(breast and melanoma-shared tumor antigen NY ESO-
1/CAG-3 and T cell responses to antigenic peptides translated
from different open reading frames)
IT Immunoassay
Nucleic acid hybridization
(cancer diagnosis by; breast and melanoma-shared tumor antigen
NY ESO-1/CAG-3 and T cell responses to
antigenic peptides translated from different open reading frames)
IT Diagnosis
(cancer; breast and melanoma-shared tumor antigen NY
ESO-1/CAG-3 and T cell responses to antigenic
peptides translated from different open reading frames)
IT Uterus, neoplasm
(cervix; breast and melanoma-shared tumor antigen NY
ESO-1/CAG-3 and T cell responses to antigenic
peptides translated from different open reading frames)
IT Intestine, neoplasm
(colon; breast and melanoma-shared tumor antigen NY
ESO-1/CAG-3 and T cell responses to antigenic
peptides translated from different open reading frames)
IT T cell (lymphocyte)
(cytotoxic; breast and melanoma-shared tumor antigen NY
ESO-1/CAG-3 and T cell responses to antigenic
peptides translated from different open reading frames)
IT Neoplasm
(diagnosis; breast and melanoma-shared tumor antigen NY
ESO-1/CAG-3 and T cell responses to antigenic
peptides translated from different open reading frames)
IT cDNA sequences
(for breast and melanoma-shared tumor antigen NY ESO
-1/CAG-3)
IT Antitumor agents
(mammary gland; breast and melanoma-shared tumor antigen NY
ESO-1/CAG-3 and T cell responses to antigenic
peptides translated from different open reading frames)
IT Antitumor agents
(melanoma; breast and melanoma-shared tumor antigen NY
ESO-1/CAG-3 and T cell responses to antigenic
peptides translated from different open reading frames)
IT Neoplasm
(metastasis; breast and melanoma-shared tumor antigen NY
ESO-1/CAG-3 and T cell responses to antigenic
peptides translated from different open reading frames)
IT Mammary gland
(neoplasm, inhibitors; breast and melanoma-shared tumor antigen
NY ESO-1/CAG-3 and T cell responses to
antigenic peptides translated from different open reading frames)
IT Bladder
Mammary gland
Prostate gland
(neoplasm; breast and melanoma-shared tumor antigen NY
ESO-1/CAG-3 and T cell responses to antigenic
peptides translated from different open reading frames)
IT Lymphoma
(non-Hodgkin's; breast and melanoma-shared tumor antigen NY
ESO-1/CAG-3 and T cell responses to antigenic
peptides translated from different open reading frames)
IT Protein sequences
(of breast and melanoma-shared tumor antigen NY ESO
-1/CAG-3)
IT Antigen-presenting cell
(recombinant expression host; breast and melanoma-shared tumor antigen
NY ESO-1/CAG-3 and T cell responses to
antigenic peptides translated from different open reading frames)
IT Thymus gland

Thymus gland
(thymoma; breast and melanoma-shared tumor antigen **NY ESO-1**/CAG-3 and T cell responses to antigenic peptides translated from different open reading frames)

IT Antigens
RL: ADV (Adverse effect, including toxicity); BPN (Biosynthetic preparation); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(tumor-assocd., **NY ESO-1**/CAG-1; breast and melanoma-shared tumor antigen **NY ESO-1**/CAG-3 and T cell responses to antigenic peptides translated from different open reading frames)

IT Baculoviridae
Fowlpox virus
Human adenovirus
Vaccinia virus
(vector; breast and melanoma-shared tumor antigen **NY ESO-1**/CAG-3 and T cell responses to antigenic peptides translated from different open reading frames)

IT 188929-68-2P 217087-02-0P
RL: ADV (Adverse effect, including toxicity); BPN (Biosynthetic preparation); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(amino acid sequence; breast and melanoma-shared tumor antigen **NY ESO-1**/CAG-3 and T cell responses to antigenic peptides translated from different open reading frames)

IT 222412-30-8
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(immunogenic peptide-encoding; breast and melanoma-shared tumor antigen **NY ESO-1**/CAG-3 and T cell responses to antigenic peptides translated from different open reading frames)

IT 216487-36-4 216487-44-4 216487-45-5 216487-55-7 216487-56-8
216487-57-9 216487-64-8 216487-65-9 216487-66-0 216487-67-1
216487-68-2 216487-69-3 216487-71-7 216487-72-8 216487-78-4
216487-79-5 222314-79-6
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(immunogenic peptide; breast and melanoma-shared tumor antigen **NY ESO-1**/CAG-3 and T cell responses to antigenic peptides translated from different open reading frames)

IT 205945-26-2P 216967-36-1P 222412-27-3P
RL: ADV (Adverse effect, including toxicity); BPN (Biosynthetic preparation); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(nucleotide sequence; breast and melanoma-shared tumor antigen **NY ESO-1**/CAG-3 and T cell responses to antigenic peptides translated from different open reading frames)

L10 ANSWER 21 OF 39 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 8
ACCESSION NUMBER: 2000:41834 CAPLUS
DOCUMENT NUMBER: 132:178930
TITLE: Cancer-testis antigens and ING1 tumor suppressor **gene** product are breast cancer antigens: characterization of tissue-specific ING1 transcripts and a homologue **gene**
AUTHOR(S): Jager, Dirk; Stockert, Elisabeth; Scanlan, Matthew J.; Gure, Ali O.; Jager, Elke; Knuth, Alexander; Old, Lloyd J.; Chen, Yao-Tseng
CORPORATE SOURCE: Department of Pathology, Cornell University Medical College, NY, 10021, USA
SOURCE: Cancer Research (1999), 59(24), 6197-6204
CODEN: CNREA8; ISSN: 0008-5472
PUBLISHER: AACR Subscription Office
DOCUMENT TYPE: Journal
LANGUAGE: English

AB SEREX (serol. anal. of recombinant tumor cDNA expression libraries) has been applied to several different tumor types and has led to the identification of a wide range of tumor antigens. In this study, a breast cancer library and a normal testicular library were analyzed using autologous and allogeneic breast cancer sera. Thirty **genes** were isolated, including 27 known **genes** and 3 previously unknown **genes**. Among the known **genes**, two cancer-testis (CT) antigens, **NY-ESO-1** and SSX2, previously defined by SEREX anal., were found. In addn., ING1, a candidate breast cancer suppressor **gene**, was isolated. This ING1 **gene** product was also recognized by 2 of 14 allogeneic sera from breast cancer patients but not 12 normal adult sera. Comparison of ING1 cDNA from normal and tumor tissues showed no mutation in the index breast cancer case and revealed the presence of at least three different mRNA transcripts with variable transcription initiation sites and exon usage. Tissue-specific expression of these transcripts was found in normal tissues and tumor cell line mRNAs. Furthermore, a novel **gene**, designated as ING2, sharing 76% nucleotide homol. with ING1 was identified in the breast cancer cDNA library. The basis of the immunogenicity of ING1 and the biol. role of ING1 and ING2 need further exploration.

REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Cancer-testis antigens and ING1 tumor suppressor **gene** product are breast cancer antigens: characterization of tissue-specific ING1 transcripts and a homologue **gene**

SO Cancer Research (1999), 59(24), 6197-6204
CODEN: CNREA8; ISSN: 0008-5472

AB SEREX (serol. anal. of recombinant tumor cDNA expression libraries) has been applied to several different tumor types and has led to the identification of a wide range of tumor antigens. In this study, a breast cancer library and a normal testicular library were analyzed using autologous and allogeneic breast cancer sera. Thirty **genes** were isolated, including 27 known **genes** and 3 previously unknown **genes**. Among the known **genes**, two cancer-testis (CT) antigens, **NY-ESO-1** and SSX2, previously defined by SEREX anal., were found. In addn., ING1, a candidate breast cancer suppressor **gene**, was isolated. This ING1 **gene** product was also recognized by 2 of 14 allogeneic sera from breast cancer patients but not 12 normal adult sera. Comparison of ING1 cDNA from normal and tumor tissues showed no mutation in the index breast cancer case and revealed the presence of at least three different mRNA transcripts with variable transcription initiation sites and exon usage. Tissue-specific expression of these transcripts was found in normal tissues and tumor cell line mRNAs. Furthermore, a novel **gene**, designated as ING2, sharing 76% nucleotide homol. with ING1 was identified

in the breast cancer cDNA library. The basis of the immunogenicity of ING1 and the biol. role of ING1 and ING2 need further exploration.

ST breast cancer antigen ING1 tumor suppressor **gene** cDNA sequence

IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(ING2; human ING1 tumor suppressor **gene**-encoded breast cancer antigen isoform cDNA sequences, tissue-specific expression, and homol. with ING2 sequences)

IT Mammary gland
(carcinoma; human ING1 tumor suppressor **gene**-encoded breast cancer antigen isoform cDNA sequences, expression, homol. with ING2, and identification of other tumor antigens expressed in breast cancer including cancer-testis antigens)

IT Protein sequences
(homol.; human ING1 tumor suppressor **gene**-encoded breast cancer antigen isoform cDNA sequences, expression, homol. with ING2, and identification of other tumor antigens expressed in breast cancer including cancer-testis antigens)

IT Animal tissue
Protein sequences
cDNA sequences
(human ING1 tumor suppressor **gene**-encoded breast cancer antigen isoform cDNA sequences, expression, homol. with ING2, and identification of other tumor antigens expressed in breast cancer including cancer-testis antigens)

IT RNA splicing
(messenger; human ING1 tumor suppressor **gene**-encoded breast cancer antigen isoform cDNA sequences, expression, homol. with ING2, and identification of other tumor antigens expressed in breast cancer including cancer-testis antigens)

IT Pre-mRNA
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(splicing; human ING1 tumor suppressor **gene**-encoded breast cancer antigen isoform cDNA sequences, expression, homol. with ING2, and identification of other tumor antigens expressed in breast cancer including cancer-testis antigens)

IT Genetic element
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(tsp (transcription start point); for human ING1 tumor suppressor **gene**-encoded breast cancer antigen isoforms transcripts)

IT **Gene**, animal
RL: ADV (Adverse effect, including toxicity); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(tumor suppressor, ING1; human ING1 tumor suppressor **gene**-encoded breast cancer antigen isoform cDNA sequences, expression, homol. with ING2, and identification of other tumor antigens expressed in breast cancer including cancer-testis antigens)

IT Antigens
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(tumor-assocd., **NY-ESO-1**; human ING1 tumor suppressor **gene**-encoded breast cancer antigen isoform cDNA sequences, expression, homol. with ING2, and identification of other tumor antigens expressed in breast cancer including cancer-testis antigens)

IT Antigens
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(tumor-assocd., SSX2; human ING1 tumor suppressor **gene**-encoded breast cancer antigen isoform cDNA sequences, expression, homol. with ING2, and identification of other tumor antigens expressed in breast cancer including cancer-testis antigens)

IT Antigens
RL: ADV (Adverse effect, including toxicity); BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(tumor-assocd., cancer-testis; human ING1 tumor suppressor **gene**-encoded breast cancer antigen isoform cDNA sequences, expression, homol. with ING2, and identification of other tumor antigens expressed in breast cancer including cancer-testis antigens)

IT Antigens
RL: ADV (Adverse effect, including toxicity); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(tumor-assocd., **gene** ING1, isoforms; human ING1 tumor suppressor **gene**-encoded breast cancer antigen isoform cDNA sequences, expression, homol. with ING2, and identification of other tumor antigens expressed in breast cancer including cancer-testis antigens)

IT 259521-80-7 259521-81-8 259521-82-9
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(amino acid sequence; human ING1 tumor suppressor **gene**-encoded breast cancer antigen isoform cDNA sequences, expression, homol. with ING2, and identification of other tumor antigens expressed in breast cancer including cancer-testis antigens)

IT 258485-90-4, GenBank AF149721 258485-91-5, GenBank AF149722
258485-92-6, GenBank AF149723
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(nucleotide sequence; human ING1 tumor suppressor **gene**-encoded breast cancer antigen isoform cDNA sequences, expression, homol. with ING2, and identification of other tumor antigens expressed in breast cancer including cancer-testis antigens)

IT 259525-90-1, GenBank AF149724
RL: PRP (Properties)
(nucleotide sequence; human ING1 tumor suppressor **gene**-encoded breast cancer antigen isoform cDNA sequences, expression, homol. with ING2, and identification of other tumor antigens expressed in breast cancer including cancer-testis antigens)

L10 ANSWER 22 OF 39 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.DUPLICATE 9
ACCESSION NUMBER: 1999291549 EMBASE
TITLE: Expression and clinical relevance of **NY-ESO-1**, MAGE-1 and MAGE-3 in neuroblastoma.

AUTHOR: Soling A.; Schurr P.; Berthold F.
CORPORATE SOURCE: Dr. A. Soling, Dept. Pediatric Hematology Oncology, University of Cologne, Joseph-Stelzmann-Strasse 9, D-50924 Cologne, Germany. ariane.soeling@medizin.uni-koeln.de
SOURCE: Anticancer Research, (1999) 19/3 B (2205-2209).
Refs: 31
ISSN: 0250-7005 CODEN: ANTRD4
COUNTRY: Greece
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 005 General Pathology and Pathological Anatomy
008 Neurology and Neurosurgery
016 Cancer
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Human **genes** **NY-ESO-1**, MAGE-1 and MAGE-3 code for antigens which are expressed in malignancies of various histological types but not in normal tissues except testis. These antigens might therefore represent potential targets for specific immunotherapy. We studied the expression of **genes** **NY-ESO-1**, MAGE-1 and MAGE-3 in 98 neuroblastoma tumors by reverse transcription-polymerase chain reaction (RT-PCR). MAGE-1 was expressed in 66%, **NY-ESO-1** in 36% and MAGE-3 in 33% of the tumors. **NY-ESO-1** **gene** expression was associated with age older than one year (p = 0.017), more differentiated tumor histology (p = 0.044), elevated urinary vanillylmandelic acid (VMA, p = 0.018) and normal serum ferritin levels (p = 0.023). MAGE-1 expression correlated significantly with normal serum ferritin levels (p = 0.009) and absence of MycN amplification (p = 0.007) while MAGE-3 expression was associated with absence of metastasis (p = 0.027). We conclude that approximately 70% of the neuroblastoma tumors express at least one of the **genes** coding for **NY-ESO-1**, MAGE-1 or -3, respectively.
TI Expression and clinical relevance of **NY-ESO-1**, MAGE-1 and MAGE-3 in neuroblastoma.
SO Anticancer Research, (1999) 19/3 B (2205-2209).
Refs: 31
ISSN: 0250-7005 CODEN: ANTRD4
AB Human **genes** **NY-ESO-1**, MAGE-1 and MAGE-3 code for antigens which are expressed in malignancies of various histological types but not in normal tissues except testis. These antigens might therefore represent potential targets for specific immunotherapy. We studied the expression of **genes** **NY-ESO-1**, MAGE-1 and MAGE-3 in 98 neuroblastoma tumors by reverse transcription-polymerase chain reaction (RT-PCR). MAGE-1 was expressed in 66%, **NY-ESO-1** in 36% and MAGE-3 in 33% of the tumors. **NY-ESO-1** **gene** expression was associated with age older than one year (p = 0.017), more differentiated tumor histology (p = 0.044), elevated. . . of metastasis (p = 0.027). We conclude that approximately 70% of the neuroblastoma tumors express at least one of the **genes** coding for **NY-ESO-1**, MAGE-1 or -3, respectively.
CT Medical Descriptors:
*neuroblastoma: ET, etiology
*neuroblastoma: TH, therapy
***gene expression**
antigen expression
immunotherapy
reverse transcription polymerase chain reaction
histology
urine level
ferritin blood level
human
major clinical study
human tissue
infant
preschool child
article
priority journal
antigen: EC, endogenous compound
vanilmandelic acid: EC,. . .

L10 ANSWER 23 OF 39 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 10
ACCESSION NUMBER: 1999:812092 CAPLUS
DOCUMENT NUMBER: 132:235152
TITLE: Expression of testicular **genes** in Hematological malignancies
AUTHOR(S): Lim, S. H.; Austin, S.; Owen-Jones, E.; Robinson, L.
CORPORATE SOURCE: Department of Hematology, University of Wales College of Medicine, Cardiff, UK
SOURCE: British Journal of Cancer (1999), 81(7), 1162-1164
CODEN: BJCAAI; ISSN: 0007-0920
PUBLISHER: Churchill Livingstone
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The **gene** expression of a new group of tumor antigens known as cancer/testis (CT) antigens is now well-recognized in some solid tumors. However, their expression in Hematol. malignancies remained unclear. In this study, the authors used reverse transcription polymerase chain reaction and Southern blot anal. to examine the presence of transcripts for the three CT antigens, **NY-ESO-1**, SSX2 and SCP1 in Hematol. malignant cells. Transcripts for SCP1 could be detected in 10% of myeloma, 5.7% of acute myeloid leukemia and 23% of chronic myeloid leukemia. In contrast, **NY-ESO-1** and SSX2 were not detected in any of the 107 tumor samples.
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI Expression of testicular **genes** in Hematological malignancies
SO British Journal of Cancer (1999), 81(7), 1162-1164
CODEN: BJCAAI; ISSN: 0007-0920
AB The **gene** expression of a new group of tumor antigens known as cancer/testis (CT) antigens is now well-recognized in some solid tumors. However, their expression in Hematol. malignancies remained unclear. In this study, the authors used reverse transcription polymerase chain reaction and Southern blot anal. to examine the presence of transcripts for the three CT antigens, **NY-ESO-1**, SSX2 and SCP1 in Hematol. malignant cells. Transcripts for SCP1 could be detected in 10% of myeloma, 5.7% of acute myeloid leukemia and 23% of chronic myeloid leukemia. In contrast, **NY-ESO-1** and SSX2 were not detected in any of the 107 tumor samples.
ST Hematol malignancy testicular **gene** expression
IT Antigens

RL: BSU (Biological study, unclassified); BIOL (Biological study)
(SCP1; expression of testicular **genes** in Hematol. malignancies)
IT Leukemia
(acute myelogenous; expression of testicular **genes** in Hematol. malignancies)
IT Antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(cancer/testis; expression of testicular **genes** in Hematol. malignancies)
IT Leukemia
(chronic myelocytic; expression of testicular **genes** in Hematol. malignancies)
IT Multiple myeloma
(expression of testicular **genes** in Hematol. malignancies)
IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(expression of testicular **genes** in Hematol. malignancies)
IT Antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(tumor-assocd.; expression of testicular **genes** in Hematol. malignancies)

L10 ANSWER 24 OF 39 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 11
ACCESSION NUMBER: 1999:527683 CAPLUS
DOCUMENT NUMBER: 131:270196
TITLE: **Genes** encoding tumor-specific antigens are expressed in human myeloma cells
AUTHOR(S): Van Baren, Nicolas; Brasseur, Francis; Godelaine, Daniele; Hames, Gerald; Ferrant, Augustin; Lehmann, Frederic; Andre, Marc; Ravoet, Christophe; Doyen, Chantal; Spagnoli, Giulio C.; Bakkus, Marleen; Thielemans, Kris; Boon, Thierry
CORPORATE SOURCE: Ludwig Institute for Cancer Research, Brussels, B-1200, Belg.
SOURCE: Blood (1999), 94(4), 1156-1164
CODEN: BLOOAW; ISSN: 0006-4971
PUBLISHER: W. B. Saunders Co.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB **Genes** of the MAGE, BAGE, GAGE, and LAGE-1/**NY**-**ESO**-1 families encode antigenic peptides that are presented by HLA class I mols. and that are recognized on human tumors by autologous cytolytic T lymphocytes. These **genes** are expressed in many solid tumor types but not in normal tissues, except male germline cells. Because the latter cells are devoid of HLA mols., the derived antigens are strictly tumor-specific and should constitute safe immunogens for cancer immunotherapy. The authors detected a significant expression of these **genes** in a high proportion of bone marrow samples from patients with advanced multiple myeloma. This observation provides a basis for clin. trials aimed at inducing a cellular immune response directed at malignant plasma cells in advanced myeloma patients.
REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI **Genes** encoding tumor-specific antigens are expressed in human myeloma cells
SO Blood (1999), 94(4), 1156-1164
CODEN: BLOOAW; ISSN: 0006-4971
AB **Genes** of the MAGE, BAGE, GAGE, and LAGE-1/**NY**-**ESO**-1 families encode antigenic peptides that are presented by HLA class I mols. and that are recognized on human tumors by autologous cytolytic T lymphocytes. These **genes** are expressed in many solid tumor types but not in normal tissues, except male germline cells. Because the latter cells are devoid of HLA mols., the derived antigens are strictly tumor-specific and should constitute safe immunogens for cancer immunotherapy. The authors detected a significant expression of these **genes** in a high proportion of bone marrow samples from patients with advanced multiple myeloma. This observation provides a basis for clin. trials aimed at inducing a cellular immune response directed at malignant plasma cells in advanced myeloma patients.
ST **gene** tumor antigen multiple myeloma
IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(BAGE; **gene** expression for tumor-specific antigens in human myeloma cells)
IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(GAGE; **gene** expression for tumor-specific antigens in human myeloma cells)
IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(LAGE1; **gene** expression for tumor-specific antigens in human myeloma cells)
IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(MAGE; **gene** expression for tumor-specific antigens in human myeloma cells)
IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**NY-ESO-1**; **gene** expression for tumor-specific antigens in human myeloma cells)
IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(PRAME; **gene** expression for tumor-specific antigens in human myeloma cells)
IT Multiple myeloma
(**gene** expression for tumor-specific antigens in human myeloma cells)
IT Antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(tumor-assocd., BAGE; **gene** expression for tumor-specific antigens in human myeloma cells)
IT Antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(tumor-assocd., GAGE; **gene** expression for tumor-specific

antigens in human myeloma cells)
IT Antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(tumor-assocd., LAGE-1; **gene** expression for tumor-specific antigens in human myeloma cells)
IT Antigens
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(tumor-assocd., MAGE; **gene** expression for tumor-specific antigens in human myeloma cells)
IT Antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(tumor-assocd., **NY-ESO-1**; **gene** expression for tumor-specific antigens in human myeloma cells)

L10 ANSWER 25 OF 39 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 12
ACCESSION NUMBER: 1999:452658 CAPLUS
DOCUMENT NUMBER: 132:21921
TITLE: Interleukin-2-induced, melanoma-specific T cells recognize CAMEL, an unexpected translation product of LAGE-1
AUTHOR(S): Aarnoudse, Corlien A.; Van Den Doel, Petra B.; Heemskerk, Bianca; Schrier, Peter I.
CORPORATE SOURCE: Department of Clinical Oncology, Leiden University Medical Center, Leiden, 2300 RC, Neth.
SOURCE: International Journal of Cancer (1999), 82(3), 442-448
CODEN: IJCNAW; ISSN: 0020-7136
PUBLISHER: Wiley-Liss, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Melanoma-specific cytotoxic T lymphocytes (CTLs) were induced by in vitro stimulation of peripheral blood mononuclear cells of a melanoma patient with autologous IL-2-producing melanoma 518/IL2.14 cells. CTL clone 1/29 recognized, in addn. to autologous melanoma cell lines, a panel of HLA-A*0201-expressing allogeneic melanoma cell lines but was not reactive with normal melanocytes. Here, the authors report the full mol. characterization of the target structure for CTL 1/29, which was identified by cDNA expression cloning. The recognized antigen was named CAMEL (CTL-recognized antigen on melanoma). The CAMEL cDNA turned out to be derived from the LAGE-1 **gene**, a recently described tumor antigen that is strongly homologous to **NY-ESO-1**. CAMEL, however, is not encoded by the putative open reading frame (ORF) of LAGE-1 but by an alternative frame starting from the second ATG of the mRNA. The first 11 amino acids of the CAMEL protein, MLMAQEALAFL, constitute the epitope of CTL 1/29. This epitope is also encoded by a similar alternative ORF in **NY-ESO-1**. In summary, CTL induction with IL-2-transfected melanoma cells has revealed a new tumor antigen that may serve as a target for immunotherapy.
REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
SO International Journal of Cancer (1999), 82(3), 442-448
CODEN: IJCNAW; ISSN: 0020-7136
AB Melanoma-specific cytotoxic T lymphocytes (CTLs) were induced by in vitro stimulation of peripheral blood mononuclear cells of a melanoma patient with autologous IL-2-producing melanoma 518/IL2.14 cells. CTL clone 1/29 recognized, in addn. to autologous melanoma cell lines, a panel of HLA-A*0201-expressing allogeneic melanoma cell lines but was not reactive with normal melanocytes. Here, the authors report the full mol. characterization of the target structure for CTL 1/29, which was identified by cDNA expression cloning. The recognized antigen was named CAMEL (CTL-recognized antigen on melanoma). The CAMEL cDNA turned out to be derived from the LAGE-1 **gene**, a recently described tumor antigen that is strongly homologous to **NY-ESO-1**. CAMEL, however, is not encoded by the putative open reading frame (ORF) of LAGE-1 but by an alternative frame starting from the second ATG of the mRNA. The first 11 amino acids of the CAMEL protein, MLMAQEALAFL, constitute the epitope of CTL 1/29. This epitope is also encoded by a similar alternative ORF in **NY-ESO-1**. In summary, CTL induction with IL-2-transfected melanoma cells has revealed a new tumor antigen that may serve as a target for immunotherapy.
IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(LAGE-1; interleukin-2-induced melanoma-specific cytotoxic T cells bind to CAMEL tumor antigen derived from LAGE-1 **gene** and human cDNA sequences for LAGE-1 and CAMEL transcripts)
IT T cell (lymphocyte)
(cytotoxic; interleukin-2-induced melanoma-specific cytotoxic T cells bind to CAMEL tumor antigen derived from LAGE-1 **gene** and human cDNA sequences for LAGE-1 and CAMEL transcripts)
IT Epitopes
Melanoma
(interleukin-2-induced melanoma-specific cytotoxic T cells bind to CAMEL tumor antigen derived from LAGE-1 **gene** and human cDNA sequences for LAGE-1 and CAMEL transcripts)
IT Interleukin 2
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(interleukin-2-induced melanoma-specific cytotoxic T cells bind to CAMEL tumor antigen derived from LAGE-1 **gene** and human cDNA sequences for LAGE-1 and CAMEL transcripts)
IT mRNA
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(interleukin-2-induced melanoma-specific cytotoxic T cells bind to CAMEL tumor antigen derived from LAGE-1 **gene** and human cDNA sequences for LAGE-1 and CAMEL transcripts)
IT Antigens
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(tumor-assocd., CAMEL (CTL-recognized antigen on melanoma); interleukin-2-induced melanoma-specific cytotoxic T cells bind to CAMEL tumor antigen derived from LAGE-1 **gene** and human cDNA sequences for LAGE-1 and CAMEL transcripts)
IT Antigens
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)

(tumor-assocd., LAGE-1; interleukin-2-induced melanoma-specific cytotoxic T cells bind to CAMEL tumor antigen derived from LAGE-1 gene and human cDNA sequences for LAGE-1 and CAMEL transcripts)
IT 210694-11-4 252058-24-5 252058-25-6
RL: PRP (Properties)
(amino acid sequence; interleukin-2-induced melanoma-specific cytotoxic T cells bind to CAMEL tumor antigen derived from LAGE-1 gene and human cDNA sequences for LAGE-1 and CAMEL transcripts)
IT 251110-45-9
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(interleukin-2-induced melanoma-specific cytotoxic T cells bind to CAMEL tumor antigen derived from LAGE-1 gene and human cDNA sequences for LAGE-1 and CAMEL transcripts)
IT 221784-36-7 221784-37-8 221784-38-9
RL: PRP (Properties)
(nucleotide sequence; interleukin-2-induced melanoma-specific cytotoxic T cells bind to CAMEL tumor antigen derived from LAGE-1 gene and human cDNA sequences for LAGE-1 and CAMEL transcripts)

L10 ANSWER 26 OF 39 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1999:535925 BIOSIS
DOCUMENT NUMBER: PREV199900535925
TITLE: Humoral immune responses of cancer patients against 'Cancer - Testis' antigen NY-ESO-1: Correlation with clinical events.
AUTHOR(S): Jaeger, E. (1); Stockert, E.; Zidianakis, Z. (1); Chen, Y.; Karbach, J. (1); Jaeger, D.; Ritter, G.; Old, L. J.; Knuth, A. (1)
CORPORATE SOURCE: (1) II. Med. Klinik, Krankenhaus Nordwest, Frankfurt Germany
SOURCE: European Journal of Cancer, (Sept., 1999) Vol. 35, No. SUPPL. 4, pp. S353-S354.
Meeting Info.: ECCO 10: The European Cancer Conference Vienna, Austria September 12-16, 1999 Federation of European Cancer Societies
. ISSN: 0959-8049.
DOCUMENT TYPE: Conference
LANGUAGE: English
TI Humoral immune responses of cancer patients against 'Cancer - Testis' antigen NY-ESO-1: Correlation with clinical events.
SO European Journal of Cancer, (Sept., 1999) Vol. 35, No. SUPPL. 4, pp. S353-S354.
Meeting Info.: ECCO 10: The European Cancer Conference Vienna, Austria September 12-16,. . .
IT . . .
& Systems of Organisms
cytotoxic T cell: blood and lymphatics, immune system
IT Chemicals & Biochemicals
tumor-associated antigen: prognostic marker; NY-ESO -1: cancer testis antigen
IT Methods & Equipment
ELISA: analytical method, detection method; Western blot: detection method, gene mapping method
IT Miscellaneous Descriptors
Meeting Abstract; Meeting Poster

L10 ANSWER 27 OF 39 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 13
ACCESSION NUMBER: 1999:712142 CAPLUS
DOCUMENT NUMBER: 132:220898
TITLE: Challenges in the specific immunotherapy of cancer
AUTHOR(S): Jager, Elke; Jager, Dirk; Knuth, Alexander
CORPORATE SOURCE: II. Medizinische Klinik, Hamatologie-Onkologie, Frankfurt am Main, 60488, Germany
SOURCE: Gann Monograph on Cancer Research (1999), 48(Recent Advances of Human Tumor Immunology and Immunotherapy), 191-199
CODEN: GMCRDC; ISSN: 0072-0151
PUBLISHER: Japan Scientific Societies Press
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review and discussion with 47 refs. The characterization of tumor-assocd. antigens recognized by cellular or humoral effectors of the immune system has opened new perspectives for cancer therapy. Several categories of cancer-assocd. antigens have been described as targets for cytotoxic T lymphocytes (CTL) in vitro and in vivo: 'Cancer Testis' (CT) antigens expressed in different tumors and normal testis, melanocyte differentiation antigens, point mutations of normal genes, antigens that are overexpressed in malignant tissues, and viral antigens. Clin. studies with peptides derived from these antigens have been initiated to induce specific CTL responses in vivo. Immunol. and clin. parameters for the assessment of peptide-specific reactions have been defined, i.e. induction of delayed-type hypersensitivity (DTH-), CTL-, autoimmune-, and tumor regression responses. Preliminary results demonstrate that tumor-assocd. peptides alone elicit specific DTH- and CTL responses leading to tumor regression after intradermal injection. Granulocyte macrophage colony-stimulating factor was proven effective to enhance peptide-specific immune reactions by amplification of dermal peptide-presenting dendritic cells. Long-lasting complete tumor regressions have been obsd. after induction of CTL by peptide immunization. However, in single cases with disease progression after an initial tumor response either a loss of the resp. tumor antigen targeted by CTL or of the presenting major histocompatibility complex (MHC) class I mol. was detected as mechanisms of immune escape under immunization in vivo. Based on these observations, cytokines to enhance antigen- and MHC class I expression in vivo are being evaluated to prevent immunoselection. Recently, a strategy utilizing spontaneous antibody responses to tumor-assocd. antigens (SEREX) has led to the identification of a new cancer-testis (CT) antigen, NY-ESO-1. In a melanoma patient with high titer antibody against NY-ESO -1 a strong human leukocyte antigen (HLA)-A2 restricted CTL reactivity against the same antigen was also found. Clin. studies involving tumor antigens that induce both antibody- and CTL responses will show whether these are better candidates for immunotherapy of cancer. Complementary use of specific active and passive immunization may improve clin. effects and prevent immune escape in vivo.
REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
SO Gann Monograph on Cancer Research (1999), 48(Recent Advances of Human Tumor Immunology and Immunotherapy), 191-199
CODEN: GMCRDC; ISSN: 0072-0151

AB A review and discussion with 47 refs. The characterization of tumor-assocd. antigens recognized by cellular or humoral effectors of the immune system has opened new perspectives for cancer therapy. Several categories of cancer-assocd. antigens have been described as targets for cytotoxic T lymphocytes (CTL) in vitro and in vivo: 'Cancer Testis' (CT) antigens expressed in different tumors and normal testis, melanocyte differentiation antigens, point mutations of normal **genes**, antigens that are overexpressed in malignant tissues, and viral antigens. Clin. studies with peptides derived from these antigens have been initiated to induce specific CTL responses in vivo. Immunol. and clin. parameters for the assessment of peptide-specific reactions have been defined, i.e. induction of delayed-type hypersensitivity (DTH-), CTL-, autoimmune-, and tumor regression responses. Preliminary results demonstrate that tumor-assocd. peptides alone elicit specific DTH- and CTL responses leading to tumor regression after intradermal injection. Granulocyte macrophage colony-stimulating factor was proven effective to enhance peptide-specific immune reactions by amplification of dermal peptide-presenting dendritic cells. Long-lasting complete tumor regressions have been obsd. after induction of CTL by peptide immunization. However, in single cases with disease progression after an initial tumor response either a loss of the resp. tumor antigen targeted by CTL or of the presenting major histocompatibility complex (MHC) class I mol. was detected as mechanisms of immune escape under immunization in vivo. Based on these observations, cytokines to enhance antigen- and MHC class I expression in vivo are being evaluated to prevent immunoselection. Recently, a strategy utilizing spontaneous antibody responses to tumor-assocd. antigens (SEREX) has led to the identification of a new cancer-testis (CT) antigen, **NY-ESO-1**. In a melanoma patient with high titer antibody against **NY-ESO -1** a strong human leukocyte antigen (HLA)-A2 restricted CTL reactivity against the same antigen was also found. Clin. studies involving tumor antigens that induce both antibody- and CTL responses will show whether these are better candidates for immunotherapy of cancer. Complementary use of specific active and passive immunization may improve clin. effects and prevent immune escape in vivo.

IT Antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**NY-ESO-1** (cancer-testis antigen);
challenges in specific immunotherapy of cancer and identification of)

L10 ANSWER 28 OF 39 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 14
ACCESSION NUMBER: 1999:444341 CAPLUS
DOCUMENT NUMBER: 131:253135
TITLE: Identification of a New, Unorthodox Member of the MAGE **Gene** Family
AUTHOR(S): Pold, Mehis; Zhou, Jin; Chen, Grace L.; Hall, Jeffrey M.; Vescio, Robert A.; Berenson, James R.
CORPORATE SOURCE: Brentwood Biomedical Research Institute, Veterans Affairs West Los Angeles Medical Center, Los Angeles, CA, 90073, USA
SOURCE: Genomics (**1999**), 59(2), 161-167
CODEN: GNMCEP; ISSN: 0888-7543
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Several tumor-assocd. antigen families, such as MAGE, GAGE/PAGE, PRAME, BAGE, and LAGE/**NY-ESO-1**, exist. These antigens are of particular interest in tumor immunol., because their expression, with exception of testis and fetal tissues, seems to be restricted to tumor cells only. We have identified a novel member of the MAGE **gene** family, MAGED1. Northern hybridization and RT-PCR demonstrated that the expression level of MAGED1 in different normal adult tissues is comparable to that in testis and fetal liver. Thus, MAGED1 does not possess an expression pattern characteristic of previously identified MAGE family **genes**, suggesting that the biol. of the MAGE-family **genes** is more complex than previously thought. Chromosome mapping linked MAGED1 to marker AFM119xd6 (DXS1039) on chromosome Xp11.23. (c) 1999 Academic Press.

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Identification of a New, Unorthodox Member of the MAGE **Gene** Family

SO Genomics (**1999**), 59(2), 161-167
CODEN: GNMCEP; ISSN: 0888-7543

AB Several tumor-assocd. antigen families, such as MAGE, GAGE/PAGE, PRAME, BAGE, and LAGE/**NY-ESO-1**, exist. These antigens are of particular interest in tumor immunol., because their expression, with exception of testis and fetal tissues, seems to be restricted to tumor cells only. We have identified a novel member of the MAGE **gene** family, MAGED1. Northern hybridization and RT-PCR demonstrated that the expression level of MAGED1 in different normal adult tissues is comparable to that in testis and fetal liver. Thus, MAGED1 does not possess an expression pattern characteristic of previously identified MAGE family **genes**, suggesting that the biol. of the MAGE-family **genes** is more complex than previously thought. Chromosome mapping linked MAGED1 to marker AFM119xd6 (DXS1039) on chromosome Xp11.23. (c) 1999 Academic Press.

ST cDNA sequence human MAGED1 **gene** tumor assocd antigen; mRNA expression human MAGED1 **gene** normal tissue tumor; chromosome X mapping human MAGED1 **gene**

IT **Gene**, animal
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(MAGED1; cDNA sequence, mRNA expression and chromosomal mapping of human MAGED1 **gene**, new unorthodox member of the MAGE **gene** family)

IT Genetic mapping
Protein sequences
cDNA sequences
(cDNA sequence, mRNA expression and chromosomal mapping of human MAGED1 **gene**, new unorthodox member of the MAGE **gene** family)

IT Chromosome
(human X, Xp11.23; cDNA sequence, mRNA expression and chromosomal mapping of human MAGED1 **gene**, new unorthodox member of the MAGE **gene** family)

IT Animal tissue
(mRNA expression of human MAGED1 **gene**, **gene** expressed in a broad range of normal tissues and in different types of tumors)

IT mRNA

RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(mRNA expression of human MAGED1 **gene**, **gene** expressed in a broad range of normal tissues and in different types of tumors)

IT Antigens
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(tumor-assocd., **gene** MAGED1; cDNA sequence, mRNA expression and chromosomal mapping of human MAGED1 **gene**, new unorthodox member of the MAGE **gene** family)

IT 244613-64-7
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(amino acid sequence; cDNA sequence, mRNA expression and chromosomal mapping of human MAGED1 **gene**, new unorthodox member of the MAGE **gene** family)

IT 225713-15-5, GenBank AF124440
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(nucleotide sequence; cDNA sequence, mRNA expression and chromosomal mapping of human MAGED1 **gene**, new unorthodox member of the MAGE **gene** family)

L10 ANSWER 29 OF 39 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 15
ACCESSION NUMBER: 1999:765002 CAPLUS
DOCUMENT NUMBER: 132:249597
TITLE: CTL-defined cancer vaccines: perspectives for active immunotherapeutic interventions in minimal residual disease
AUTHOR(S): Jager, Elke; Jager, Dirk; Knuth, Alexander
CORPORATE SOURCE: II. Medizinische Klinik, Hamatologie-Onkologie, Frankfurt am Main, Germany
SOURCE: Cancer and Metastasis Reviews (1999), 18(1), 143-150
CODEN: CMRED4; ISSN: 0167-7659
PUBLISHER: Kluwer Academic Publishers
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review with 53 refs. The characterization of tumor-assocd. antigens recognized by cellular or humoral effectors of the immune system has opened new perspectives for cancer therapy. Several categories of cancer-assocd. antigens have been described as targets for cytotoxic T lymphocytes (CTL) in vitro and in vivo: (1) "Cancer-Testis" (CT) antigens expressed in different tumors and normal testis, (2) melanocyte differentiation antigens, (3) point mutations of normal **genes**, (4) antigens that are overexpressed in malignant tissues, and (5) viral antigens. Clin. studies with peptides derived from these antigens have been initiated to induce specific CTL responses in vivo. Immunol. and clin. parameters for the assessment of peptide-specific reactions have been defined, i.e. induction of DTH-, CTL-, autoimmune-, and tumor-regression responses. Preliminary results demonstrate that tumor-assocd. peptides alone elicit specific DTH- and CTL-responses leading to tumor regression after intradermal injection. GM-CSF was proven effective to enhance peptide-specific immune reactions by amplification of dermal peptide-presenting dendritic cells. Long lasting complete tumor regressions have been obsd. after induction of CTL by peptide immunization. Based on these results, active immunotherapy with tumor-assocd. antigens may be a promising approach for patients with minimal residual disease, who are at high risk for tumor recurrence. However, in single cases with disease progression after an initial tumor response either a loss of the resp. tumor antigen targeted by CTL or of the presenting MHC class I mol. was detected as mechanisms of immune escape under immunization in vivo. Based on these observations, cytokines to enhance antigen- and MHC-class I expression in vivo are being evaluated to prevent immunoselection. Recently, a strategy utilizing spontaneous antibody responses to tumor-assocd. antigens (SEREX) has led to the identification of a new CT antigen, **NY-ESO-1**. In a melanoma patient with high titer antibody against **NY-ESO-1** also a strong HLA-A2 restricted CTL reactivity against the same antigen was found. Clin. studies involving tumor antigens that induce both antibody- and CTL-responses will show whether these are better candidates for immunotherapy of cancer.

REFERENCE COUNT: 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Cancer and Metastasis Reviews (1999), 18(1), 143-150
CODEN: CMRED4; ISSN: 0167-7659
AB A review with 53 refs. The characterization of tumor-assocd. antigens recognized by cellular or humoral effectors of the immune system has opened new perspectives for cancer therapy. Several categories of cancer-assocd. antigens have been described as targets for cytotoxic T lymphocytes (CTL) in vitro and in vivo: (1) "Cancer-Testis" (CT) antigens expressed in different tumors and normal testis, (2) melanocyte differentiation antigens, (3) point mutations of normal **genes**, (4) antigens that are overexpressed in malignant tissues, and (5) viral antigens. Clin. studies with peptides derived from these antigens have been initiated to induce specific CTL responses in vivo. Immunol. and clin. parameters for the assessment of peptide-specific reactions have been defined, i.e. induction of DTH-, CTL-, autoimmune-, and tumor-regression responses. Preliminary results demonstrate that tumor-assocd. peptides alone elicit specific DTH- and CTL-responses leading to tumor regression after intradermal injection. GM-CSF was proven effective to enhance peptide-specific immune reactions by amplification of dermal peptide-presenting dendritic cells. Long lasting complete tumor regressions have been obsd. after induction of CTL by peptide immunization. Based on these results, active immunotherapy with tumor-assocd. antigens may be a promising approach for patients with minimal residual disease, who are at high risk for tumor recurrence. However, in single cases with disease progression after an initial tumor response either a loss of the resp. tumor antigen targeted by CTL or of the presenting MHC class I mol. was detected as mechanisms of immune escape under immunization in vivo. Based on these observations, cytokines to enhance antigen- and MHC-class I expression in vivo are being evaluated to prevent immunoselection. Recently, a strategy utilizing spontaneous antibody responses to tumor-assocd. antigens (SEREX) has led to the identification of a new CT antigen, **NY-ESO-1**. In a melanoma patient with high titer antibody against **NY-ESO-1** also a strong HLA-A2 restricted CTL reactivity against the same antigen was found. Clin. studies involving tumor antigens that induce both antibody- and CTL-responses will show whether these are better candidates for immunotherapy of cancer.

L10 ANSWER 30 OF 39 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.DUPLICATE 16
ACCESSION NUMBER: 1999083962 EMBASE
TITLE: **NY-ESO-1** may be a potential target for lung cancer immunotherapy.
AUTHOR: Lee L.; Wang R.-F.; Wang X.; Mixon A.; Johnson B.E.; Rosenberg S.A.; Schrump D.S.
CORPORATE SOURCE: Dr. D.S. Schrump, Surgery Branch, National Cancer Institute, National Institutes of Health, Bethesda, MD 20892-1502, United States
SOURCE: Cancer Journal from Scientific American, (1999) 5/1 (20-25).
Refs: 31
ISSN: 1081-4442 CODEN: CJSAFC
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 016 Cancer
026 Immunology, Serology and Transplantation
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English
AB PURPOSE: To evaluate the frequency of **NY-ESO-1** expression in cultured lung cancer cells and to determine if this cancer-testis antigen can be presented for recognition by an HLA-restricted cytolytic T-cell clone specific for **NY-ESO-1**. METHODS AND RESULTS: Reverse transcriptase and polymerase chain reaction amplification techniques were utilized to screen a panel of lung and esophageal cancer cell lines for expression of **NY-ESO-1** encoding a recently identified cancer-testis antigen. **NY-ESO-1** expression was detected in 11 of 16 small cell lung cancer lines, three of seven non-small cell lung cancer lines, and zero of 12 esophageal cancer lines. 5-Aza-2'- deoxycytidine induced expression of **NY-ESO-1** in lung cancer cells. Expression of HLA-A31 by plasmid transfection or retroviral transduction enabled recognition of lung cancer cells by an HLA-A31-restricted cytotoxic T lymphocyte done specific for **NY-ESO-1**. CONCLUSIONS: **NY-ESO-1** expression may be analogous to MAGE **gene** expression in lung cancer lines in terms of frequency and mechanism of transcriptional regulation. Furthermore, **NY-ESO-1** can be presented on lung cancer cells for recognition by HLA-restricted cytotoxic T lymphocytes. Further investigation is warranted to determine if **NY-ESO-1** can be exploited for the immunotherapy for lung cancer.
TI **NY-ESO-1** may be a potential target for lung cancer immunotherapy.
SO Cancer Journal from Scientific American, (1999) 5/1 (20-25).
Refs: 31
ISSN: 1081-4442 CODEN: CJSAFC
AB PURPOSE: To evaluate the frequency of **NY-ESO-1** expression in cultured lung cancer cells and to determine if this cancer-testis antigen can be presented for recognition by an HLA-restricted cytolytic T-cell clone specific for **NY-ESO-1**. METHODS AND RESULTS: Reverse transcriptase and polymerase chain reaction amplification techniques were utilized to screen a panel of lung and esophageal cancer cell lines for expression of **NY-ESO-1** encoding a recently identified cancer-testis antigen. **NY-ESO-1** expression was detected in 11 of 16 small cell lung cancer lines, three of seven non-small cell lung cancer lines, and zero of 12 esophageal cancer lines. 5-Aza-2'- deoxycytidine induced expression of **NY-ESO-1** in lung cancer cells. Expression of HLA-A31 by plasmid transfection or retroviral transduction enabled recognition of lung cancer cells by an HLA-A31-restricted cytotoxic T lymphocyte done specific for **NY-ESO-1**. CONCLUSIONS: **NY-ESO-1** expression may be analogous to MAGE **gene** expression in lung cancer lines in terms of frequency and mechanism of transcriptional regulation. Furthermore, **NY-ESO-1** can be presented on lung cancer cells for recognition by HLA-restricted cytotoxic T lymphocytes. Further investigation is warranted to determine if **NY-ESO-1** can be exploited for the immunotherapy for lung cancer.

L10 ANSWER 31 OF 39 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 17
ACCESSION NUMBER: 1998:378504 CAPLUS
DOCUMENT NUMBER: 129:135045
TITLE: Identification of multiple cancer/testis antigens by allogeneic antibody screening of a melanoma cell line library
AUTHOR(S): Chen, Yao-Tseng; Gure, Ali O.; Tsang, Solam; Stockert, Elisabeth; Jager, Elke; Knuth, Alexander; Old, Lloyd J.
CORPORATE SOURCE: Cornell University Medical College, New York Branch at Memorial Sloan-Kettering Cancer Center, New York, NY, 10021, USA
SOURCE: Proceedings of the National Academy of Sciences of the United States of America (1998), 95(12), 6919-6923
CODEN: PNASA6; ISSN: 0027-8424
PUBLISHER: National Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Cancer/testis (CT) antigens-immunogenic protein antigens that are expressed in testis and a proportion of diverse human cancer types-are promising targets for cancer vaccines. To identify new CT antigens, the authors constructed an expression cDNA library from a melanoma cell line that expresses a wide range of CT antigens and screened the library with an allogeneic melanoma patient serum known to contain antibodies against two CT antigens, MAGE-1 and **NY-ESO-1**. CDNA clones isolated from this library identified four CT antigen **genes**: MAGE-4a, **NY-ESO-1**, LAGE-1, and CT7. Of these four, only MAGE-4a and **NY-ESO-1** proteins had been shown to be immunogenic. LAGE-1 is a member of the **NY-ESO-1 gene** family, and CT7 is a newly defined **gene** with partial sequence homol. to the MAGE family at its carboxyl terminus. The predicted CT7 protein, however, contains a distinct repetitive sequence at the 5' end and is much larger than MAGE proteins. The findings document the immunogenicity of LAGE-1 and CT7 and emphasize the power of serol. anal. of cDNA expression libraries in identifying new human tumor antigens.
SO Proceedings of the National Academy of Sciences of the United States of America (1998), 95(12), 6919-6923
CODEN: PNASA6; ISSN: 0027-8424

AB Cancer/testis (CT) antigens-immunogenic protein antigens that are expressed in testis and a proportion of diverse human cancer types-are promising targets for cancer vaccines. To identify new CT antigens, the authors constructed an expression cDNA library from a melanoma cell line that expresses a wide range of CT antigens and screened the library with an allogeneic melanoma patient serum known to contain antibodies against two CT antigens, MAGE-1 and NY-ESO-1 . CDNA clones isolated from this library identified four CT antigen genes: MAGE-4a, NY-ESO-1, LAGE-1, and CT7. Of these four, only MAGE-4a and NY-ESO-1 proteins had been shown to be immunogenic. LAGE-1 is a member of the NY-ESO-1 gene family, and CT7 is a newly defined gene with partial sequence homol. to the MAGE family at its carboxyl terminus. The predicted CT7 protein, however, contains a distinct repetitive sequence at the 5' end and is much larger than MAGE proteins. The findings document the immunogenicity of LAGE-1 and CT7 and emphasize the power of serol. anal. of cDNA expression libraries in identifying new human tumor antigens.

IT Gene, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(CT7; cancer/testis antigen CT7 identification by allogeneic antibody screening of melanoma cell line cDNA library and expression in testis and human tumors)

IT Gene, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(KOC; cancer/testis antigen genes identified by allogeneic antibody screening of melanoma cell line cDNA library)

IT Gene, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(LAGE-1; cancer/testis antigen genes identified by allogeneic antibody screening of melanoma cell line cDNA library)

IT Gene, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(MAGE-4a; cancer/testis antigen genes identified by allogeneic antibody screening of melanoma cell line cDNA library)

IT Gene, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(NY-ESO-1; cancer/testis antigen genes identified by allogeneic antibody screening of melanoma cell line cDNA library)

IT cDNA library
(SEREX (serol. anal. of recombinant cDNA expression libraries); cancer/testis antigen genes identified by allogeneic antibody screening of melanoma cell line cDNA library)

IT Gene
(expression; cancer/testis antigen CT7 identification by allogeneic antibody screening of melanoma cell line cDNA library and expression in testis and human tumors)

IT Antigens
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(tumor-assocd., NY-ESO-1; cancer/testis antigens identified by allogeneic antibody screening of melanoma cell line cDNA library and expression in testis and human tumors)

L10 ANSWER 32 OF 39 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 18
ACCESSION NUMBER: 1998:289047 CAPLUS
DOCUMENT NUMBER: 129:66614
TITLE: Identification of a meiosis-specific protein as a member of the class of cancer/testis antigens
AUTHOR(S): Tureci, Ozlem; Sahin, Ugur; Zwick, Carsten; Koslowski, Michael; Seitz, Gerhard; Pfreundschuh, Michael
CORPORATE SOURCE: Medizinische Klinik I, Universitatskliniken des Saarlandes, Homburg/Saar, 66421, Germany
SOURCE: Proceedings of the National Academy of Sciences of the United States of America (1998), 95(9), 5211-5216
CODEN: PNASA6; ISSN: 0027-8424
PUBLISHER: National Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Little is known about the function of human cancer/testis antigens (CTAs), such as MAGE, BAGE, GAGE, HOM-MEL-40, and NY-ESO-1, the expression of which is restricted to human malignancies and testis. When screening a cDNA expression library enriched for testis-specific representative long transcripts for reactivity with high-titered IgG antibodies from the serum of a patient with renal cell carcinoma, one repeatedly detected antigen, designated HOM-TES-14, turned out to be encoded by the synaptonemal complex protein 1 (SCP-1) gene. SCP-1 is known to be selectively expressed during the meiotic prophase of spermatocytes and is involved in the pairing of homologous chromosomes, an essential step for the generation of haploid cells in meiosis I. Investigation of a broad spectrum of normal and malignant tissues revealed expression of SCP-1 transcripts and antigen selectively in a variety of neoplastic tissues and tumor cell lines. Immunofluorescence microscopy anal. with specific antiserum showed a cell cycle phase-independent nuclear expression of SCP-1 protein in cancer cells. SCP-1 differs from other members of the class of CTA by its localization on chromosome 1 and its frequent expression in malignant gliomas, breast, renal cell, and ovarian cancer. The aberrant expression of SCP-1 in tumors might contribute to their genomic instability and suggests that the functional role of other CTA might also relate to meiosis.

SO Proceedings of the National Academy of Sciences of the United States of America (1998), 95(9), 5211-5216
CODEN: PNASA6; ISSN: 0027-8424

AB Little is known about the function of human cancer/testis antigens (CTAs), such as MAGE, BAGE, GAGE, HOM-MEL-40, and NY-ESO-1, the expression of which is restricted to human malignancies and testis. When screening a cDNA expression library enriched for testis-specific representative long transcripts for reactivity with high-titered IgG antibodies from the serum of a patient with renal cell carcinoma, one repeatedly detected antigen, designated HOM-TES-14, turned out to be encoded by the synaptonemal complex protein 1 (SCP-1) gene. SCP-1 is known to be selectively expressed during the meiotic prophase of spermatocytes and is involved in the pairing of homologous chromosomes, an essential step for the generation of haploid

cells in meiosis I. Investigation of a broad spectrum of normal and malignant tissues revealed expression of SCP-1 transcripts and antigen selectively in a variety of neoplastic tissues and tumor cell lines. Immunofluorescence microscopy anal. with specific antiserum showed a cell cycle phase-independent nuclear expression of SCP-1 protein in cancer cells. SCP-1 differs from other members of the class of CTA by its localization on chromosome 1 and its frequent expression in malignant gliomas, breast, renal cell, and ovarian cancer. The aberrant expressibn of SCP-1 in tumors might contribute to their **genomic** instability and suggests that the functional role of other CTA might also relate to meiosis.

L10 ANSWER 33 OF 39 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
ACCESSION NUMBER: 1998323518 EMBASE
TITLE: Heterogeneous expression of the tumor-associated antigens RAGE-1, PRAME, and glycoprotein 75 in human renal cell carcinoma: Candidates for T-cell- based immunotherapies?.
AUTHOR: Neumann E.; Engelsberg A.; Decker J.; Storkel S.; Jaeger E.; Huber C.; Seliger B.
CORPORATE SOURCE: B. Seliger, Johannes Gutenberg-Universitat, III. Medizinische Klinik, Langenbeckstrasse 1, 55101 Mainz, Germany
SOURCE: Cancer Research, (**15 Sep 1998**) 58/18 (4090-4095). Refs: 48
ISSN: 0008-5472 CODEN: CNREA8
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 005 General Pathology and Pathological Anatomy
016 Cancer
026 Immunology, Serology and Transplantation
028 Urology and Nephrology
LANGUAGE: English
SUMMARY LANGUAGE: English
AB It has recently been shown that tumor-associated antigens (TAAs) can evoke tumor-specific T-cell-defined immune responses in cancer patients, thereby offering the possibility of treating patients with such antigens. To develop T-cell-based immunotherapeutic approaches for renal cell carcinoma (RCC), we studied the mRNA expression profile of the TAAs RAGE-1, tyrosinase, MAGE-1, MAGE-2, **NY-ESO-1**, Melan-A/MART-1, glycoprotein (gp) 75, gp100, .beta.- catenin, PRAME, and MUM-1 in 14 human RCC cell lines and in tissue specimens of 37 primary RCCs, 2 related metastases, and 33 specimens of normal renal epithelium. Reverse transcription-PCR was performed with TAA-reactive primers, and the specificity of the PCR products was confirmed by Southern blot and/or direct sequencing. PRAME (10 of 14 cell lines), RAGE-1 (7 of 14 cell lines), and gp75 (4 of 14 cell lines) antigens were expressed in a high percentage of RCC cell lines, although the level of TAA expression varied among the different RCC cell lines. However, low levels of TAA expression in RCC cells are sufficient for recognition by TAA-specific CTLs. Transcription of tyrosinase, Melan-A/MART-1, MAGE-1, MAGE-2, **NY-ESO-1**, gp100, .beta.-catenin, and MUM-1 was not detected in any RCC cell line. Approximately 50% of surgically removed neoplasias expressed at least one TAA. RAGE-1 mRNA expression was found in 8 of 39 (21%) RCC samples, PRAME mRNA expression was found in 15 of 39 (40%) RCC samples, and gp75 mRNA expression was found in 4 of 39 (11%) RCC samples, but the expression levels of these TAAs were heterogeneous in the different RCC lesions. One RCC specimen expressed MAGE- 2, whereas transcription was not detected in any RCC specimen for MAGE-1, **NY- ESO-1**, tyrosinase, Melan-A/MART-1, gp100, .beta.-catenin, and MUM-1. The normal kidney epithelium samples were negative for any TAA tested. Thus, RAGE-1, PRAME, and gp75 expression is found with a different frequency in surgically removed lesions and in RCC cell lines, suggesting that a subgroup of RCC patients could be selected for immunotherapeutic strategies that may benefit from immunization against the RAGE-1, gp75, and/or PRAME antigens. However, additional targets for T-cell-based immunotherapy of RCC have yet to be identified.
SO Cancer Research, (**15 Sep 1998**) 58/18 (4090-4095). Refs: 48
ISSN: 0008-5472 CODEN: CNREA8
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CT Medical Descriptors:
*kidney carcinoma
antigen expression
protein expression
genetic transcription
gene expression
protein determination
antigen detection
t lymphocyte
immunotherapy
human
human tissue
human cell
article
priority journal
*tumor antigen: EC, endogenous compound
*glycoprotein: EC, endogenous compound
messenger rna: EC, endogenous compound

L10 ANSWER 34 OF 39 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 19
ACCESSION NUMBER: 1998:651692 CAPLUS
DOCUMENT NUMBER: 130:51038
TITLE: A breast and melanoma-shared tumor antigen: T cell responses to antigenic peptides translated from different open reading frames
AUTHOR(S): Wang, Rong-Fu; Johnston, Samuel L.; Zeng, Gang; Topalian, Suzanne L.; Schwartzentruber, Douglas J.; Rosenberg, Steven A.

CORPORATE SOURCE: Surgery Branch, National Cancer Institute, Bethesda, MD, 20892, USA
SOURCE: Journal of Immunology (1998), 161(7), 3596-3606
CODEN: JOIMA3; ISSN: 0022-1767
PUBLISHER: American Association of Immunologists
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Infusion of TIL586 along with IL-2 into the autologous patient with metastatic melanoma resulted in the objective regression of tumor. Here, the authors report that screening a cDNA library from the 586mel cell line using CTL clones derived from TIL586 resulted in the isolation of a **gene**, CAG-3 (cancer Ag **gene** 3). Sequence anal. revealed that CAG-3 encodes an open reading frame identical to **NY-ESO-1**, which was recently reported to be recognized by autologous serum from a patient with esophageal cancer. Thus, **NY-ESO-1** appears to be an immune target for both Ab- and T cell-mediated responses. Significantly, **NY-ESO-1**-specific CTL clones were capable of recognizing two HLA-A31-pos. fresh and cultured breast tumors. To the authors' knowledge, this represents the first direct demonstration that tumor-specific CTL clones can recognize both breast and melanoma tumor cells. A 10-mer antigenic peptide ESO10-53 (ASGPGGGAPR) was identified from the normal open reading frame of **NY-ESO-1** based on its ability to sensitize HLA-A31-pos. target cells for cytokine release and specific lysis. Interestingly, two addnl. CTL clones that were sensitized with **NY-ESO-1** recognized two overlapping antigenic peptides derived from an alternative open reading frame of the same **gene**. These findings indicate that CTLs simultaneously responded to two different **gene** products translated from the normal and alternative reading frames of the same **gene**. Understanding of this mechanism by which the alternative reading frame is translated may have important implications in tumor immunol.

REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS. RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Journal of Immunology (1998), 161(7), 3596-3606
CODEN: JOIMA3; ISSN: 0022-1767
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ST **NYESO1** tumor antigen T cell epitope alternative ORF; sequence **NYESO1** tumor antigen cDNA human alternative ORF

IT **Gene**, animal
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(**NY-ESO-1**; breast and melanoma-shared tumor antigen; human T cell responses to antigenic peptides translated from different open reading frames)

IT **Gene**
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(open reading frame; breast and melanoma-shared tumor antigen; human T cell responses to antigenic peptides translated from different open reading frames)

IT Antigens
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(tumor-assocd., **NY-ESO-1** ORF1 and ORF2; breast and melanoma-shared tumor antigen; human T cell responses to antigenic peptides translated from different open reading frames)

L10 ANSWER 35 OF 39 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 20
ACCESSION NUMBER: 1998:552036 CAPLUS
DOCUMENT NUMBER: 129:274363
TITLE: Development of a retrovirus-based complementary DNA expression system for the cloning of tumor antigens
AUTHOR(S): Wang, Rong-Fu; Wang, Xiang; Johnston, Samuel L.; Zeng, Gang; Robbins, Paul F.; Rosenberg, Steven A.
CORPORATE SOURCE: Surgery Branch, National Cancer Institute, Bethesda, MD, 20892, USA
SOURCE: Cancer Research (1998), 58(16), 3519-3525
CODEN: CNREA8; ISSN: 0008-5472
PUBLISHER: American Association for Cancer Research
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A new retroviral system has been developed for the generation of a cDNA library and the functional cloning of tumor antigens. These retroviral vectors contain a cytomegalovirus promoter in the 5' long terminal repeat, an extended packaging signal for rapid prodn. of high-titer retroviral particles, and many convenient cloning sites for cDNA library construction. The vesicular stomatitis virus G protein has been used to generate pseudotype retroviral particles to enable efficient viral infection. Using this system, viral titers in the range of 106 colony-forming units/mL could be generated routinely, and a high transduction efficiency in human primary cells, including fibroblasts, was achieved. In addn., a new procedure has been devised for screening a retrovirus-based cDNA library without a functional selection. The utility of this system was demonstrated by constructing a retrovirus-based cDNA library and re-isolating the **NY-ESO-1** tumor

antigen from a cDNA library using an antigen-specific CTL. This approach can facilitate the identification of novel tumor antigens recognized by T cells without knowledge of MHC class I restriction elements and is generally applicable for the isolation of any **gene** as long as a biol. assay is available.

SO Cancer Research (1998), 58(16), 3519-3525
CODEN: CNREA8; ISSN: 0008-5472

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antigen from a cDNA library using an antigen-specific CTL. This approach can facilitate the identification of novel tumor antigens recognized by T cells without knowledge of MHC class I restriction elements and is generally applicable for the isolation of any **gene** as long as a biol. assay is available.

L10 ANSWER 36 OF 39 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1999:122872 BIOSIS
DOCUMENT NUMBER: PREV199900122872
TITLE: Expression of testicular **genes** in hematological malignancies.
AUTHOR(S): Lim, S. H.; Austin, S.; Owen-Jones, E.; Robinson, L.
CORPORATE SOURCE: Dep. Haematology, Univ. Wales Coll. Med., Heath Park, Cardiff CF4 4XN UK
SOURCE: Blood, (**Nov. 15, 1998**) Vol. 92, No. 10 SUPPL. 1 PART 1-2, pp. 246B-247B.
Meeting Info.: 40th Annual Meeting of the American Society of Hematology Miami Beach, Florida, USA December 4-8, 1998 The American Society of Heamatology
. ISSN: 0006-4971.
DOCUMENT TYPE: Conference
LANGUAGE: English
TI Expression of testicular **genes** in hematological malignancies.
SO Blood, (**Nov. 15, 1998**) Vol. 92, No. 10 SUPPL. 1 PART 1-2, pp. 246B-247B.
Meeting Info.: 40th Annual Meeting of the American. . .
IT . . .
disease, neoplastic disease; hematological malignancy: blood and lymphatic disease
IT Chemicals & Biochemicals
tumor antigens; BCR-ABL: expression; CRKL: phosphorylated forms; **NY-ESO-1**: cancer-testicular antigen; SCP1: cancer-testicular antigen; SSX2: cancer-testicular antigen
IT Alternate Indexing
Hematologic Neoplasms (MeSH); Leukemia, Myeloid, Chronic (MeSH)

L10 ANSWER 37 OF 39 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1999:90187 BIOSIS
DOCUMENT NUMBER: PREV199900090187
TITLE: Expression of multiple cancer/testis (CT) antigens in breast cancer and melanoma: Basis for polyvalent CT vaccine strategies.
AUTHOR(S): Sahin, Ugur (1); Tuereci, Oezlem (1); Vollmar, Evi (1); Zwick, Carsten (1); Seitz, Gerhard; Villena, Carlos; Pfreundschuh, Michael (1)
CORPORATE SOURCE: (1) Innere Medizin, Unikliniken Saarlandes, Saarlandes Germany
SOURCE: Annals of Hematology, (1998) Vol. 77, No. SUPPL. 2, pp. S167.
Meeting Info.: Annual Congress of the German and Austrian Societies of Hematology and Oncology Frankfurt, Germany October 25-28, 1998 Austrian Society of Hematology and Oncology
. ISSN: 0939-5555.
DOCUMENT TYPE: Conference
LANGUAGE: English
SO Annals of Hematology, (1998) Vol. 77, No. SUPPL. 2, pp. S167.
Meeting Info.: Annual Congress of the German and Austrian Societies of Hematology and Oncology Frankfurt, Germany October 25-28, 1998 Austrian Society of Hematology and Oncology
. ISSN: 0939-5555.
IT . . .
breast cancer: neoplastic disease, reproductive system disease/female; melanoma: neoplastic disease
IT Chemicals & Biochemicals
cancer/testis antigens; polyvalent cancer/testis vaccine; BAGE **gene**; GAGE **gene**; MAGE **gene**; **NY-ESO-1** antigen; SCP-1/HOM-TES-14 antigen; SSX-2/HOM-MEL-40 antigen
IT Alternate Indexing
Breast Neoplasms (MeSH); Melanoma (MeSH)

L10 ANSWER 38 OF 39 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 21
ACCESSION NUMBER: 1997:173393 CAPLUS
DOCUMENT NUMBER: 126:275643
TITLE: A testicular antigen aberrantly expressed in human cancers detected by autologous antibody screening
AUTHOR(S): Chen, Yao-Tseng; Scanlan, Matthew J.; Sahin, Ugur; Tuereci, Oezlem; Gure, Ali O.; Tsang, Solam; Williamson, Barbara; Stockert, Elisabeth; Pfreundschuh, Michael; Old, LLoyd J.
CORPORATE SOURCE: Cornell Univ. Med. Coll., New York, NY, 10021, USA
SOURCE: Proceedings of the National Academy of Sciences of the United States of America (1997), 94(5), 1914-1918
CODEN: PNASA6; ISSN: 0027-8424
PUBLISHER: National Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Serol. anal. of recombinant cDNA expression libraries (SEREX) using tumor mRNA and autologous patient serum provides a powerful approach to identify

immunogenic tumor antigens. The authors have applied this methodol. to a case of esophageal squamous cell carcinoma and identified several candidate tumor targets. One of these, **NY-ESO-1**, showed restricted mRNA expression in normal tissues, with high-level mRNA expression found only in testis and ovary tissues. Reverse transcription-PCR anal. showed **NY-ESO-1** mRNA expression in a variable proportion of a wide array of human cancers, including melanoma, breast cancer, bladder cancer, prostate cancer, and hepatocellular carcinoma. **NY-ESO-1** encodes a putative protein of Mr 17,1995 having no homol. with any known protein. The pattern of **NY-ESO-1** expression indicates that it belongs to an expanding family of immunogenic testicular antigens that are aberrantly expressed in human cancers in a lineage-nonspecific fashion. These antigens, initially detected by either cytotoxic T cells (MAGE, BATE, GAGE-1) or antibodies [HOM-MEL-40(SSX2), **NY-ESO-1**], represent a pool of antigenic targets for cancer vaccination.

SO Proceedings of the National Academy of Sciences of the United States of America (1997), 94(5), 1914-1918
CODEN: PNASA6; ISSN: 0027-8424

AB Serol. anal. of recombinant cDNA expression libraries (SEREX) using tumor mRNA and autologous patient serum provides a powerful approach to identify immunogenic tumor antigens. The authors have applied this methodol. to a case of esophageal squamous cell carcinoma and identified several candidate tumor targets. One of these, **NY-ESO-1**, showed restricted mRNA expression in normal tissues, with high-level mRNA expression found only in testis and ovary tissues. Reverse transcription-PCR anal. showed **NY-ESO-1** mRNA expression in a variable proportion of a wide array of human cancers, including melanoma, breast cancer, bladder cancer, prostate cancer, and hepatocellular carcinoma. **NY-ESO-1** encodes a putative protein of Mr 17,1995 having no homol. with any known protein. The pattern of **NY-ESO-1** expression indicates that it belongs to an expanding family of immunogenic testicular antigens that are aberrantly expressed in human cancers in a lineage-nonspecific fashion. These antigens, initially detected by either cytotoxic T cells (MAGE, BATE, GAGE-1) or antibodies [HOM-MEL-40(SSX2), **NY-ESO-1**], represent a pool of antigenic targets for cancer vaccination.

ST testis antigen cDNA sequence human cancer; **NYESO1** cDNA sequence antigen cancer human

IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(FUS/TLS; NY-ESO **genes** encoding immunogenic tumor antigens in human esophageal squamous cell carcinoma and other human cancers)

IT Melanoma
(**NY-ESO-1** testicular antigen from human esophageal squamous cell carcinoma cDNA sequence and aberrant expression in human cancers)

IT Ovary
Testis
(**NY-ESO-1** testicular antigen from human esophageal squamous cell carcinoma cDNA sequence and expression in normal ovary and testis and human cancers)

IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(**NY-ESO-1**; **NY-ESO-1** testicular antigen from human esophageal squamous cell carcinoma cDNA sequence and aberrant expression in human cancers)

IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(NY-ESO-4; NY-ESO **genes** encoding immunogenic tumor antigens in human esophageal squamous cell carcinoma and other human cancers)

IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(NY-ESO-5; NY-ESO **genes** encoding immunogenic tumor antigens in human esophageal squamous cell carcinoma and other human cancers)

IT **Gene**, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(NY-ESO-8; NY-ESO **genes** encoding immunogenic tumor antigens in human esophageal squamous cell carcinoma and other human cancers)

IT Ribonucleoproteins
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(RNA U1-contg.; NY-ESO **genes** encoding immunogenic tumor antigens in human esophageal squamous cell carcinoma and other human cancers)

IT cDNA sequences
(for **NY-ESO-1** testicular antigen from human esophageal squamous cell carcinoma aberrantly expressed in human cancers)

IT Liver, neoplasm
(hepatoma; **NY-ESO-1** testicular antigen from human esophageal squamous cell carcinoma cDNA sequence and aberrant expression in human cancers)

IT Bladder
Mammary gland
Prostate gland
(neoplasm; **NY-ESO-1** testicular antigen from human esophageal squamous cell carcinoma cDNA sequence and aberrant expression in human cancers)

IT Protein sequences
(of **NY-ESO-1** testicular antigen from human esophageal squamous cell carcinoma aberrantly expressed in human cancers)

IT Esophagus
(squamous cell carcinoma; **NY-ESO-1** testicular antigen from human esophageal squamous cell carcinoma cDNA sequence and aberrant expression in human cancers)

IT Antigens
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(tumor-assocd., **NY-ESO-1**; **NY-ESO-1** testicular antigen from human esophageal squamous cell carcinoma cDNA sequence and aberrant expression in human cancers)

IT 188929-68-2

RL: PRP (Properties)
(amino acid sequence; **NY-ESO-1** testicular antigen from human esophageal squamous cell carcinoma cDNA sequence and aberrant expression in human cancers)
IT 187500-87-4, GenBank U87459
RL: PRP (Properties)
(nucleotide sequence; **NY-ESO-1** testicular antigen from human esophageal squamous cell carcinoma cDNA sequence and aberrant expression in human cancers)

L10 ANSWER 39 OF 39 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 22
ACCESSION NUMBER: 1998:375953 CAPLUS
DOCUMENT NUMBER: 129:145475
TITLE: **Genomic** cloning and localization of CTAG, a **gene** encoding an autoimmunogenic cancer-testis antigen **NY-ESO-1**, to human chromosome Xq28
AUTHOR(S): Chen, Y. -T.; Boyer, A. D.; Viars, C. S.; Tsang, S.; Old, L. J.; Arden, K. C.
CORPORATE SOURCE: Department of Pathology, Cornell University Medical College, New York, NY, 10021, USA
SOURCE: Cytogenetics and Cell Genetics (1997), 79(3-4), 237-240
CODEN: CGCGBR; ISSN: 0301-0171
PUBLISHER: S. Karger AG
DOCUMENT TYPE: Journal
LANGUAGE: English
AB CTAG was initially cloned from an esophageal squamous cell carcinoma cDNA expression library by immunoscreening with autologous patient's serum. CTAG mRNA is expressed in a proportion of human cancers in a lineage-non-specific fashion, whereas its expression in normal tissues is restricted to testis and ovary only. This expression pattern suggests that the CTAG product (**NY-ESO-1**) is an aberrantly activated tumor antigen and can potentially be an antigenic target for tumor vaccination. In the present study, human **genomic** clones of CTAG was isolated and its **genomic** organization established. By somatic cell hybrid studies and fluorescence in-situ hybridization, this **gene** was localized to chromosome Xq28, a region that also contains members of MAGE, a **gene** family that encodes several immunogenic tumor antigens with the characteristic cancer/testis expression pattern.
TI **Genomic** cloning and localization of CTAG, a **gene** encoding an autoimmunogenic cancer-testis antigen **NY-ESO-1**, to human chromosome Xq28
SO Cytogenetics and Cell Genetics (1997), 79(3-4), 237-240
CODEN: CGCGBR; ISSN: 0301-0171
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ST antigen **NYESO1 gene** CTAG mapping human; chromosome Xq28 antigen **NYESO1 gene** mapping
IT **Gene**, animal
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(CTAG; **genomic** cloning and localization of CTAG, a **gene** encoding an autoimmunogenic cancer-testis antigen **NY-ESO-1**, to human chromosome Xq28)
IT Antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**NY-ESO-1**; **genomic** cloning and localization of CTAG, a **gene** encoding an autoimmunogenic cancer-testis antigen **NY-ESO-1**, to human chromosome Xq28)
IT Genetic mapping
(**genomic** cloning and localization of CTAG, a **gene** encoding an autoimmunogenic cancer-testis antigen **NY-ESO-1**, to human chromosome Xq28)
IT Chromosome
(human X; **genomic** cloning and localization of CTAG, a **gene** encoding an autoimmunogenic cancer-testis antigen **NY-ESO-1**, to human chromosome Xq28)

=> dis his

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FILE 'MEDLINE, CAPLUS, EMBASE, BIOSIS' ENTERED AT 16:50:33 ON 29 AUG 2002
L1 183 S LETHE L?/AU OR BOON-FALLEUR T?/AU
L2 310 S LETHE B?/AU OR BOON-FALLEUR T?/AU
L3 7 S L2 AND ((LAGE (1N) 2) OR (LAGE2) OR (NY (1N) ESO (1N) 1) OR
L4 5 DUP REM L3 (2 DUPLICATES REMOVED)
L5 335 S ((LAGE (1N) 2) OR (LAGE2) OR (NY (1N) ESO (1N) 1) OR (NYESO
L6 328 S L5 NOT L2
L7 129 S L6 AND PD<20000222
L8 71 S L7 AND (GENE OR GENOMIC)
L9 71 S L7 (P) (GENE OR GENOMIC)
L10 39 DUP REM L9 (32 DUPLICATES REMOVED)

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